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Racer News

Kyosho Mid-Atlantic Gas Challenge
by John Howell

PROCAR Worlds
by John Howell

IEDA Worlds
by Mike Ogle

Track Directory

Track Reports

36 Kyosho Inferno 10
by Frank Masi
Offspring of a world champion

46 OFNA HODR
by A.R. Flatbush
Practical performer

CONTENTS

VOLUME 9, NUMBER 4 • APRIL 1994



FEATURES

20 Home-Built Dragster

Go fast, don't turn! • by Mike Ogle

42 Fuel-Proofing Your Car

Pyrotechnic precautions • by John Huber

50 .12 vs. .15 Nitro Engines

Weighing the options • by Edward Platt

56 1/8-Scale vs. 1/10-Scale

What's right for you? • by George Gonzalez

72 Basic Engine Tuning

Avoid combustion catastrophe! • by John Huber

76 Install New Armatures

Cost-saving measures • by Frank Masi

108 Pipe Basics

No more back-pressure bafflement! • by John Huber

142 Holeshot Alignment Gauge

Setting it straight • by John Huber

Departments

6 Editorial
by Frank Masi

8 Letters

10 What's New

15 Inside Scoop
by Chris Chianelli

28 Readers' Rides

32 Pit Tips
by Jim Newman

Columns

24 Troubleshooting
by John Huber

124 R/C Doctor
by Doug Mertes

ON THE COVER: Kyosho's Inferno 10.

(Photo by Walter Sidas.) This page: action at the Mid-Atlantic Gas Challenge. (Photo by John Howell.)

EDITORIAL

What Price Glory?

I'd like to send editorial diversity into the other room for a moment and solely address those of you who race competitively. We receive many letters each month, and a question asked disturbingly frequently is: "How can I get sponsored?"

If you're looking for sponsorship, ask yourself this: are you involved with R/C cars because you want to relax and have fun, or because you're only interested in winning? I'm also aware that the consensus among racers is that you need sponsorship to have any chance of winning a big race.

This is a classic case of the grass always being greener somewhere else. Trust me when I tell you that life in sponsored-driver-land isn't always rosy. People think that sponsored drivers get *everything* free. This isn't always the case; in many cases, a driver needs items for which he has no sponsor, so he must buy them. If a driver receives 100-percent sponsorship, he must *never* use a product that's not supplied by his benefactors, or he risks losing their support! Also, when companies kick down the money and the products necessary to support a team driver, they expect him to always do well at races. As if I need to tell you, this puts a lot of pressure on the racer.

On the subject of competitiveness: I do agree that you need to have some level of sponsorship to compete with factory drivers, but this is something that the sanctioning bodies need to address. If you started racing motocross, would you expect to find yourself in the same moto with Supercross champion Jeremy McGrath just because you bought a new Honda CR250? Of course not. Racing is all that Jeremy does; it's his job, and his bike has some factory "works" parts that simply aren't available to you or me.

It's unrealistic for you to believe that what stands between you and a national or world championship is a sponsor. Factory racers sell the image of the companies that they represent, so winning means increased sales. But what's really important to any manufacturer is that you buy their product and use it to have *fun*. Before you envy the sponsored driver, remember this: racing is his job. But it's your hobby; so enjoy it!



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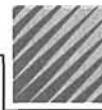
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LETTERS

WRITE TO US! We welcome your comments and suggestions. Letters should be addressed to "Letters," *Radio Control Car Action*, 251 Danbury Rd., Wilton, CT 06897. Letters may be edited for clarity and brevity, and each must include a full name and address or telephone number so that the identity of the sender can be verified. We regret that, owing to the tremendous numbers of letters we receive, we can't respond to every one.

START TRUCKIN'

I have an RC10 Team Car with a Green Machine stock motor and a Novak 410-M5 speed controller. I've been racing successfully for a while. Most of the people I race with have trucks (yes, we race cars and trucks together). After a while, I got tired of my car and decided to convert it to an RC10T, but I don't know what parts I need! If you could give me a list of parts, it would be greatly appreciated. By the way, great magazine! Before I found *Car Action*, I looked at other magazines, but they just didn't cut the mustard. And why do so many people pick on Chris Chianelli? I feel sorry for him. I mean, life would be hell if every day was a bad hair day!

ALEX HENDERSON
Wayne, PA

OK, Wayne, here's a list of all the parts you'll need to convert your RC10 Team Car into a Team Truck. Good luck!

Front nose plate—no. 7305; nose-brace tubes—no. 7315; front body-mount brace—no. 7318; front body mounts—no. 7319; front bumper—no. 7324; truck front A-arms—no. 7206; inner hinge pins—no. 7209; front bulkhead—no. 7207; front bulkhead aluminum support—no. 7208; truck front shock tower—no. 7214; front-end screw set—no. 7241; front shocks: hard-anodized—no. 6432, gold-anodized—no. 6421; gold springs, front—no. 7425; gold springs, rear—no. 7435; turnbuckle, upper control rod, tie rod x 2—no. 7253; front-shock lower mounting screw—no. 7420; servo-saver (complete kit)—no. 7250; truck rear A-arms—no. 7355; rear suspension mounts (0 degrees)—no. 7364; rear hub carriers (3 degrees)—no. 7365; truck rear shock tower—no. 7353; inner rear hinge pins—no. 7356; outer rear hinge pins—no. 7357; truck universals—no. 7362 (or

standard dogbones—no. 7361); one-piece front wheels—no. 7842; one-piece rear wheels—no. 7802; stadium truck body—no. 6122; front tires—no. 7870; rear tires—no. 7820.

By the way, we pick on Chris Chianelli simply because he deserves it. JH

THE PARKING LOT SCENE

I've been a model car enthusiast for many years. My only problem is that I got discouraged and stopped racing when my car stopped being competitive. Now I'm ready to get back into racing, and I'm faced with several major decisions. I want to try my hand at gas, but it's sooo expensive! I need to know what's economical, and what's less competitive, because my driving skills are rusty. Can you help?

ERIC PALMER
Yorba Linda, CA

Eric, one of the coolest things that we're getting involved with right now is setting up some parking lot type races here at the office. Frank Masi, Karen Jeffcoat, Chris Chianelli, John Huber and I all have Formula 1 cars and 4WD on-road racing cars, and we're going to go out and set up a few courses and have a blast! Get a few of your buddies hooked up with an F1 or 4WD car, go out to a local parking lot, kick back and have a fun, informal race session. And by the way, these cars look totally scale and really bitchin'. The best part is that you don't have to have major dollars or awesome driving skills to have fun at this. Have a blast! JH

COLD GAS

Hey *Car Action*, what's up? Great mag. I'm thinking about getting a nitro-powered car. I live in northern Indiana, where it gets very cold. Will nitro-powered engines get hurt if I drive them in very cold weather (10 to 30 degrees Fahrenheit)?

TIM McALEXANDER
Mishawaka, IN

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No, Tim, running your gas engine in cold conditions won't hurt it, as long as you have the mixture set correctly. Generally speaking, you have to lean it out a little bit more than you do in the summertime to compensate for the temperature difference. Also, remember that severe cold affects plastic's rigidity! Parts such as Lexan bodies, suspension arms, etc., get brittle and are apt to break in the cold, so don't hit anything solid!

JH

BEEFED-UP BLITZER

I own a Tamiya Stadium Blitzer. I want to know if there are any companies out there that make an aluminum tub chassis or any other hop-up parts for it. Thanks. By the way, I love your mag.

JASON KENDALL
Milwaukee, WI

Jason, fortunately, the Futaba FXT and the Stadium Blitzer share the same suspension and driveline components. Try giving Futaba a call at (714) 455-9888, and see if they sell the aluminum chassis for their FXT separately. The Futaba FXT also comes with a ball diff that pops right into your gearbox. Other mods you might want to consider include ball bearings, better shocks and, possibly, an electronic speed controller. For more info, check out Stan VanDruff's review of the Futaba FXT in our November '92 issue.

JH

A BAD BRAKE

First of all, I'd like to say that you have the best R/C mag in the world. I read each issue over and over. I'd like to ask you if it's safe to use automotive brake cleaner to clean motors. I see many guys and gals at my local track using this. I thought I'd ask the people with the best R/C knowledge before using it to clean my motor, bearings, etc. Thank you!

JIM SIODLA
Victorville, CA

Yeah, Jim, I've seen a lot of people using brake cleaner to clean their motors, and

(Continued on page 132)

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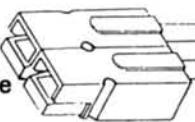
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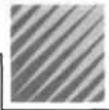


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TRINITY Evolution 10

MAGIC TRICKS

by Joel "Magic" Johnson
IFMAR World Champion

For those of you who are getting ready to gear up for this summer's on-road racing season, here are some new products from Trinity R&D that you won't want to be without when you hit the track.

Let's start with the new Trinity Wide Track Front Axle for the EV-10. With the resurgence of parking lot racing, most of the racing this summer will probably take place outdoors. Racing on a parking lot means less than ideal traction conditions, which is where the wide front end will give you the advantage over the standard front end. By widening the front-track width, the car will become more controllable under power and easier to drive on slippery surfaces. This will translate to quicker, more consistent lap times. If your EV-10 is too aggressive for your outdoor track conditions, then the wide track front axle is just what you need to put you back up front.

Another factor with parking lot racing is that the tracks tend to be small and tight. This is where our Trinity Short Track Lite Chassis will come in handy. This chassis allows you to make the wheelbase either 0.325 inch or 0.65 inch shorter. The shorter wheelbase will make the car react in and out of those tight turns much quicker, allowing faster lap times and fewer mistakes. We have also incorporated battery slots into the design to allow the batteries to be mounted lower in the chassis. This lowers the center of gravity, making for better cornering and high-speed stability. We have also included nerf wings to protect the rear axle, and more chassis area to make radio-gear mounting and wiring much easier.

If on-road racing is in your future this summer, make sure that you check out Trinity's latest updates to the EV-10. The Wide Track Front Axle (EV0135, \$20) and the Short Track Lite Chassis (EV0134, \$79.99)—two parts you don't want to be without when you hit the track!

Good luck and good racing!

Until next month,
The "Magic" Man

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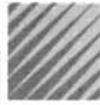
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WHAT'S NEW

KYOSHO

1/8-Scale Tires

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Part nos.—KYOC6234 (soft),

KYOC6235 (hard); price—\$39.99/pr.

Kyosho/Great Planes Model Distributors, P.O. Box 9021, Champaign, IL 61826; (217) 398-6300.

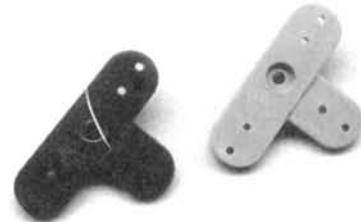
KIMBROUGH

Heavy-Duty Servo Arms

At the request of gas racers, Kimbrough now offers a servo arm that has a third arm at a right angle to the other arms (resembling a "T"). You can trim off the arm you don't need and have either a straight servo arm or one that's a right angle.

Part nos.—111 (Airtronics, KO), 120 (Futaba);
price—\$1.50/two.

Kimbrough Products, 1322 Bell Ave. Unit 1-C, Tustin, CA 92680; (714) 258-7426.



RPM

Slipper Wrench

This handy little slipper wrench is easy to use, and it fits in your pocket. It's L-shaped and has a 1/4-inch socket on each end. Reach under the side of a truck body with the long end, and make more precise adjustments with the short end. It's also great for the nylon nuts on your upper shock mounts!

Part no.—7096; price—\$3.95.

RPM, 14978 Sierra Bonita Ln., Chino, CA 91710; (909) 393-0366.



DYNAMITE

TNT .12 Engine

Looking for power? The TNT .12 is just the ticket. An aluminum piston and a chrome-plated brass sleeve produce outstanding engine compression for radical acceleration and blazing top end. For precise power tuning, there's a dual-needle carburetor. To reduce vibration and wear, the crank-shaft rides on dual ball bearings. A robust bushed conrod cuts down on friction and withstands high rpm. It's all topped with an oversize, red-anodized finned head for proper cooling. The TNT .12 is available in a Sport Version, which has a pull-start, and a Race Version; both come with mufflers.



Dynamite; distributed by Horizon Hobby Distributors, 4105 Fieldstone Rd., Champaign, IL 61821; (217) 355-9511.

TRINITY

Spring Post Wrench

This wrench was designed to help you unscrew the spring posts on stock and modified motors. If you want to cut the commos on your stock motors, or if you simply wish to remove your hardware for cleaning, this wrench is essential.

Part no.—RC4528;
price—\$13.49.

Trinity Products Inc., 1901 E. Linden Ave. #8, Linden, NJ 07036; (908) 862-1705.



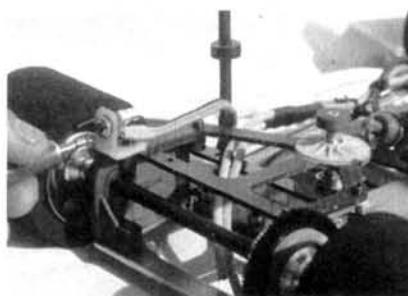
INLINE RACING PRODUCTS

The Switch

Has your car ever been turned off accidentally by a corner marshal? Bumped off by a fellow racer? Or has your ESC switch ever fallen out of the car and been dragged along the track? Try The Switch; it eliminates these possibilities. Just pull out the activator pin, and your car is turned on permanently—or at least until you replace the pin. Available at 2.5mm for $\frac{1}{12}$ scale and 3.5mm for $\frac{1}{10}$ and $\frac{1}{8}$ scale, it's a must for serious racers!

Part nos.—TS002, TS001; **prices**—\$10, \$12.

Inline Racing Products, 419 Main St., Ste. 290, Huntington Beach, CA 92648; (714) 960-0772.



Descriptions of new products appearing on these pages were derived from press releases supplied by the manufacturers and/or their advertising agencies. The information given here doesn't constitute an endorsement by **Radio Control Car Action**, nor is it a guarantee of product performance or safety. When writing to the manufacturer about any product described here, be sure to say you read about it in **Radio Control Car Action**.

Team NOVAK

TEAM SECRETS

ONE-TOUCH MAGIC

The Team Novak engineers put on their thinking caps and designed new circuitry with the best features ever offered to the R/C crowd.



The new One-Touch circuitry found in the Rooster Reversible speed control is so **simple** that it's easy to overlook the new features. Here are a few of the secrets that make the new circuitry so special.

Glitches that would **zap** the radio reception of most entry-level radio systems are a thing of the past with the One-Touch system. The new circuitry looks at the radio signal and filters out the glitch gremlins so that the Rooster sees **only the good stuff**.

Stuck with less than full reverse because of lack of throw in your transmitter? **Not with the Rooster!** The new circuitry adjusts to radios with short throw. Full reverse **and** full forward is no problem. Grab yourself a Rooster if you're having radio trouble with your reversible ESC.

Most reversible ESCs are limited to partial power in reverse. The Novak engineers wanted to **stomp** on the gas in reverse and see some action. The answer: circuitry that provides equal performance in forward **and** reverse. The Rooster doesn't just chug around in reverse, he's got **tire smokin' power** in **both** directions.

An added safety bonus is that the ESC won't be damaged even if the throttle reversing switch on the transmitter is accidentally set in the wrong position. The extra protection prevents dreaded downtime and repair costs.

For even more safety, the new circuitry features **Dual-Level** Thermal Protection. Level 1 limits the throttle to $\frac{1}{2}$ speed until the temperature returns to a safe level. If the temperature continues to rise, Level 2 kicks in and automatically shuts the throttle down until the ESC has a chance to cool down. **No more fried speed controls!**

If you're looking for a reversible ESC that's easy to use, priced right, and loaded with high-tech features, see your local hobby dealer and choose the new Team Novak Rooster Reversible ESC.

Team Novak welcomes your comments and secrets!

NOVAK ELECTRONICS, INC.
18910 Teller Avenue, Irvine, CA 92715
• (714) 833-8873 •



INSIDE SCOOP

by CHRIS CHIANELLI

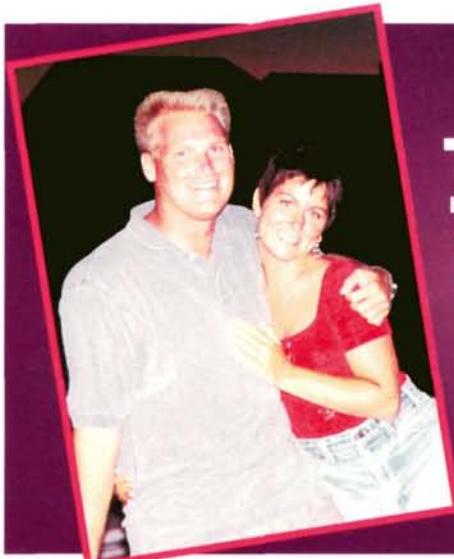
IN SEARCH OF FUN AND GLORY, 'CAUSE LIFE'S TOO SHORT TO BE CHEAP!

Sprint cars used to be the most expensive way to do dirt-oval racing, but thanks to Team Cobra, that's obsolete info. The new Nemesis Sport sprinter is a version of Cobra's highly successful Nemesis, but the Sport has been specially made for those with lots of dirt-oval desire but not a whole lot of dough. Although it shares its design with the full-race Nemesis, the Sport model costs less because it uses Oilite bushings instead of bearings, has gold-anodized shocks in place of hard-anodized ones and uses a fiberglass chassis instead of a graphite one. You know this car will perform; you know that it doesn't cost a lot, so quit your whining and start racing! The Sport is also available as a "wedge" chassis for use in other classes of dirt-oval racing.

Turn Left...



...for a Discount



Little Magic?

The internationally famous R/C racer/playboy Joel Johnson has finally met his match. It took the outstanding charm and beauty of Julie Macchia to tame the debonair Magic Man. This June, Jolie and Jule—I mean, Julie and Joel—will exchange vows face to face, and Joel will be a good boy from race to race.

Julie and Joel, sittin' in a tree, K—I—S—S... (I know: grow up Chianelli). For those of you who wish to send gifts of cash, please do so via Trinity Products, attention: Ernie Provetti. Seriously, though, we at *Car Action* extend our best wishes to Julie and our congratulations to Joel. Well, kids, best of luck with your marriage, 'cause then comes Magic in the baby carriage.

Coupe Scoops

The latest rage to make its way from Japan to the shores of America is a fleet of cool 4WD on-road racing sedans and coupes. Kyosho, Yokomo and Tamiya each offer several versions in both electric and gas. Here's a glimpse at what's coming:



KYOSHO EP 10

Kyosho's 1/10-scale electric chassis looks as if it might have been a Lazer off-road buggy at one time. Notice that it has a much narrower wheel track and that it now sits very low to the ground.



TAMIYA TOURING

Left: Tamiya's new Alfa Romeo racing sedan. Though its chassis looks identical to that of previous Tamiya 4WD offerings, like the Mercedes 190 and the Nissan Skyline GT-R, the Alfa's chassis has reworked suspension geometry and better weight distribution. Look for a Track Report on this car soon!

Winning is What Separates Champions From Everyone Else. And We've Won It All



- IFMAR 1/10th, On-Road Modified World Championship** - Joel Johnson
- ROAR 1/10th, On-Road, Modified National Championship** - Joel Johnson
- ROAR 1/12th, On-Road, Modified National Championship** - Joel Johnson
- 4-Cell Modified Winter Nationals Modified Championship** - Mike Blackstock
- U.S. Oval Masters Modified Championship** - Mike Blackstock
- ROAR 1/10th Speedway Modified National Champion** - Ernie Bucc

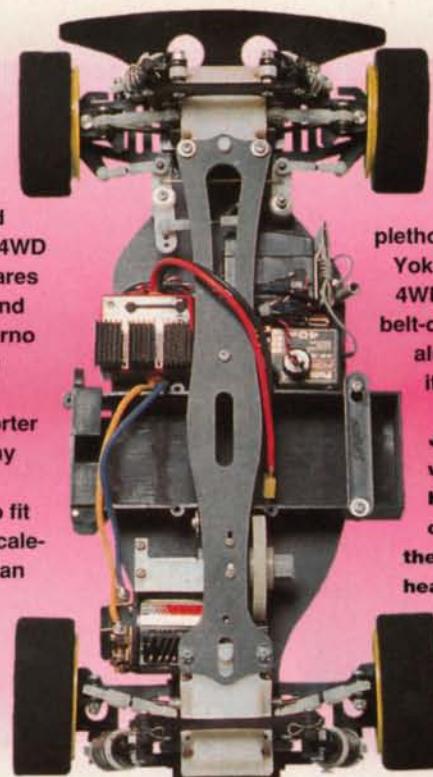
Trinity Team PUSHED battery championships are all in super-competitive national and international modified pro-class racing, not in stock or regional events

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**KYOSHO GP 10**

Here's Kyosho's gas-powered, $\frac{1}{10}$ -scale, on-road chassis. This 4WD nitro burner shares much of its chassis and driveline with the Inferno 10 (see the Inferno 10 Track Report in this issue), but it has shorter arms for the skinny profile that's necessary to fit within the scale-looking sedan bodies.

**YOKOMO YR-4**

Shown here is Yokomo's YR-4 electric-powered, on-road 4WD chassis. The YR-4 appears to have "borrowed" a plethora of parts from Yokomo's extensive line of 4WD buggies, including its belt-drive system, its cast-aluminum bulkheads and its shocks.

Judging by the rate at which Tamiya and Kyosho Indy/Formula 1 cars have taken off in the U.S., look for some heavy parking lot racing action this summer, with an added 4WD Sedan Class!

(Photos courtesy of RCM Japan.)

Zero Gravity™ Pinions

Trinity Pinions...Ours are precision machined from 6061 T-6 aircraft aluminum and teflon impregnated for smooth meshing and minimum friction.



Trinity Zero Gravity Pinions Are Super Light!

Brand "R" Pinions Are All So Over-Weight, Power is Reduced!

Brand "R" ...They have poor tooth finish and profile. They don't mesh well with the spur gear.



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Dynamite Cuts the Hassle



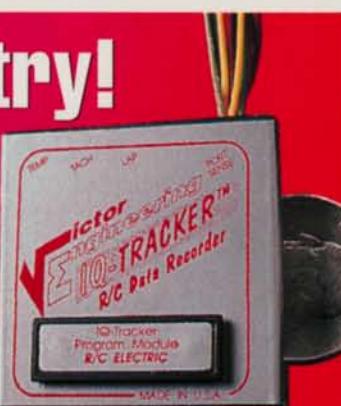
Anyone who has installed a .12-size glow engine in an RC10GT gas truck knows the hassle of cutting the output shaft to the proper length for the clutch assembly. Not only does this require strapping on goggles and wrestling with a high-speed Moto-Tool (if you even have one), but one false move, and it's time for the "crankshaft replacement show"! With its pre-cut shaft, the TNT .12 can be bolted into the Associated truck right out of the box. That's dynamite!

For more information, contact Horizon Hobby Distributors, P.O. Box 3726, Champaign, IL 61821.

R/C Telemetry!

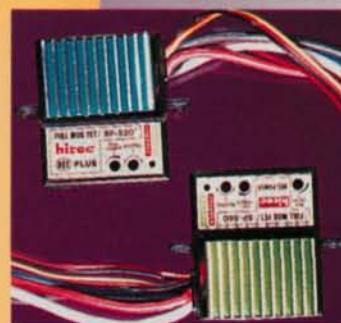
If you follow Formula 1, you've probably heard about Honda's engine telemetry device that beams all sorts of crucial information from the engine back to Honda engineers while the racecar is running on the track! This technology has made it to the world of R/C car racing, and Victor Engineering is the company that's bringing it to you in the form of the IQ-Tracker, which is, in the words of its manufacturer "the world's first computerized R/C car telemetric recorder."

The Tracker consists of a small, lightweight (0.6 oz.) module that is mounted on your car's chassis and gathers and stores vital information, such as the percentage of battery-pack capacity remaining, elapsed time, rpm, motor-current draw, temperature and much more. At the end of your run, you can use a digital voltmeter to retrieve the data, or, with optional accessories, the unit can be interfaced with any IBM-compatible PC or Victor's Super-IQ battery/motor processor.



POWERFUL BUYS

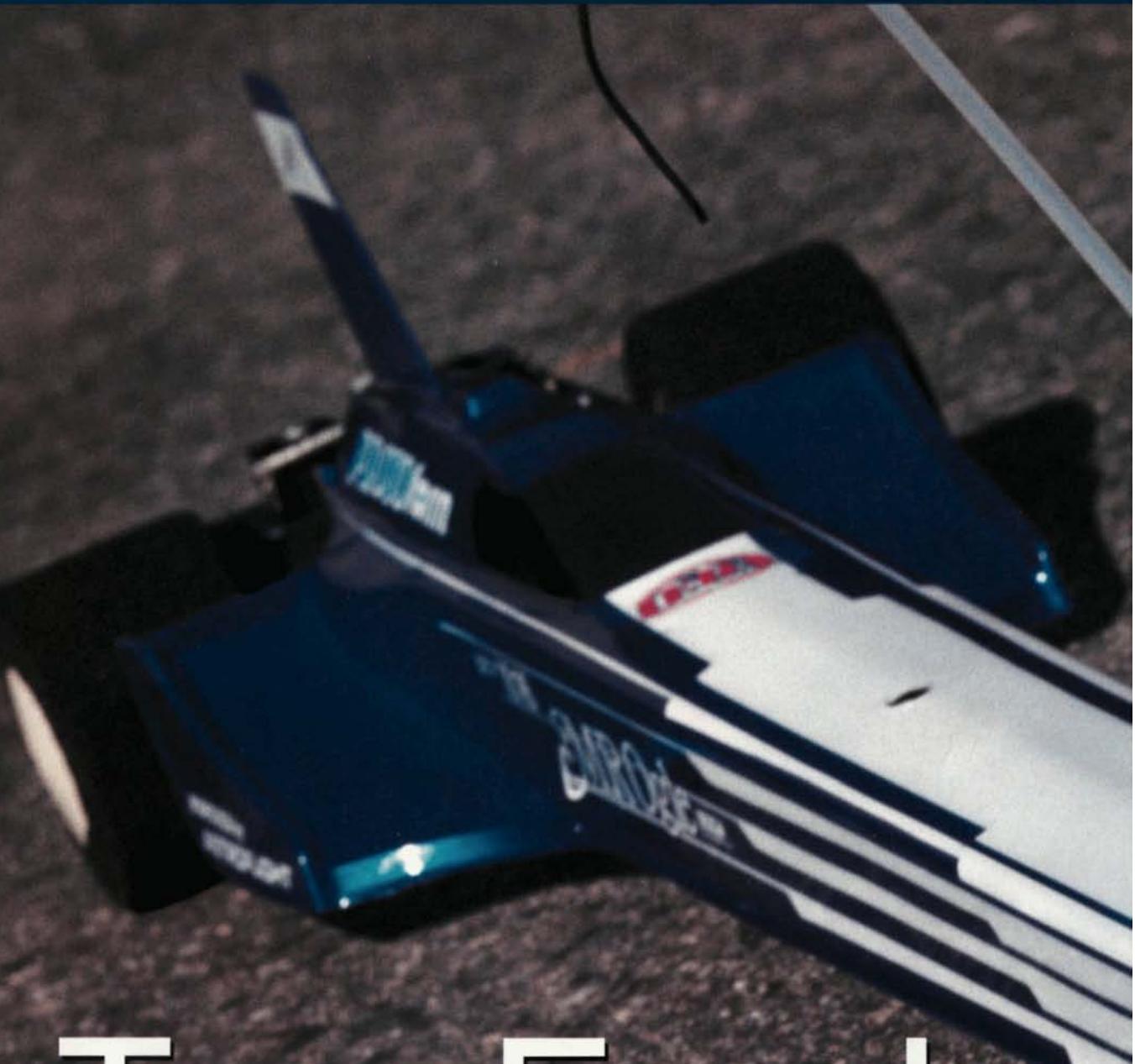
Attention budget-bound speed freaks! Hitec has upgraded two of its low-priced ESCs to include a polarity protection circuit that will keep the controller from frying should you accidentally hook it up to your battery in reverse. Also, Hitec has devised an ingenious method of attaching the heat sink to the controller's Mosfets using a heat-conductive silicone material. By using this method, the possibility of shorting out one of the Mosfets is greatly minimized. These upgraded controllers—called the SP-520 Plus and SP-560 Power—retail for a mere \$89.95 and \$99.95 respectively, and they feature unique cases that have mounting "ears" just like a servo.



Quick Pits and Loose Nuts

Have you ever had to tighten your car or truck's wheel nuts at trackside? How about when you're at a race and you want to try a different set of tires during a practice run, but you don't have the right tools handy? RPM has solved these problems with its new, molded, wheel-nut wrenches. One wrench is designed to fit the wheel nuts of Losi cars and trucks, and there's another wrench that will fit the wheel nuts of Associated cars and trucks. In addition, both are double-ended "spanner" wrenches, and their other ends fit those small, nylon, shock-mounting nuts and the front wheel nuts of RC10s. Also shown in the photo is RPM's new slipper-clutch adjustment wrench that fits both Losi and Associated cars and trucks, and a new, one-piece, center steering link for Associated cars and trucks.

H O M E - B U I L T



Top Fuel Dragster

BY MIKE OGLE

WHEN PEOPLE FIRST see this car, they usually say, "What the heck?" It doesn't look as if it will negotiate turns very well, and as for its jumping capability—no way! This land missile was built to do one thing: accelerate in a straight line, as fast as 20 Ni-Cds will carry it!

Having raced in the IEDA's dragster classes for a few years, I had a lot of concepts of how to build a car—from the ground up—to incorporate some new,

experimental ideas. I came up with the basic design more than two years ago, and I finally decided to build it.

With a lot of help and guidance from some good friends in the R/C industry, the result is a one-of-a-kind, Top Fuel Unlimited 20-cell dragster!

This 25-inch-wheelbase car is based on the new Lockmann Precision* dragster chassis, and it uses most of their stock components, including the base chassis plate, the upright longitudinal stiffener, the hard-anodized aluminum motor-pod sides and an ingenious molded top plate that has been cut and drilled to fit a dual-microswitch and servo-throttle setup. A mini-servo is mounted between the two 25A microswitches, and when the servo arm swings one way, it activates the "go" microswitch, and it's instant "on." During braking, the servo swings the other way, closes the opposing switch and shorts the motor, bringing the car to a stop.

Ride the rail!

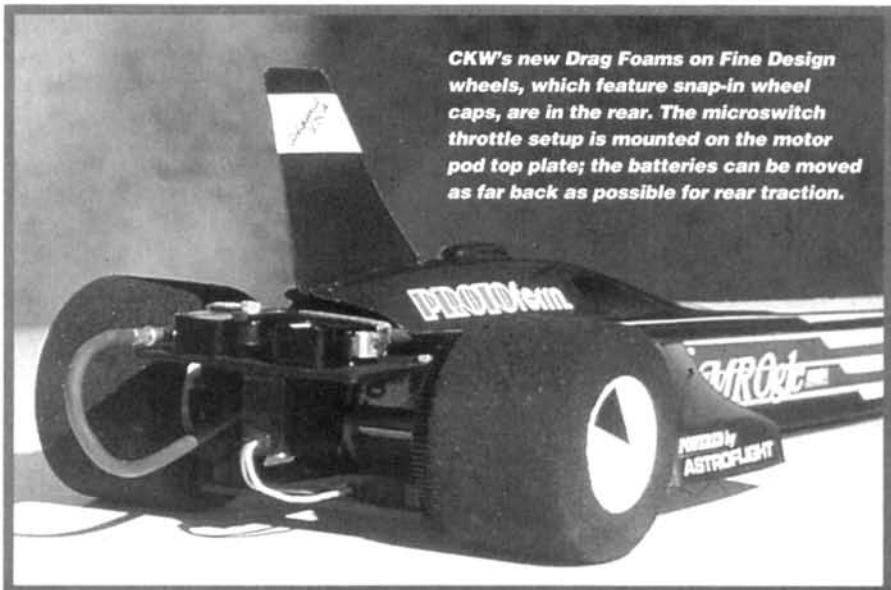


The custom-built body just barely covers the Lockmann chassis and components. All the downforce comes from the bodywork itself. No overhead rear wing is used.

The unique front steering setup was machined by Randall Rausch*. It features two small Delrin disk wheels in a Delrin "yoke" that pivots on two bearings at the front of the car; the wheels trail behind it. The beauty of this setup is that the car is inclined to track dead straight. You have to really coax it to turn, and the car wants to immediately re-center itself. Also, as Pro-Stock racer Terence Holt noted, because both front wheels are so close together, it's practically impossible to get the car out of "tweak." The steering setup is mounted on a heavy-duty graphite nosepiece that's attached to the main chassis with two nylon bolts. In case there's a strong impact, the nylon bolts will just shear off; this should prevent the chassis and the nosepiece from becoming seriously damaged.

Having the front wheels inboard affords a really exotic body. I carved the basic body plug out of wood and automotive body putty and shipped it to Protoform's* Dale Epp, who added the finishing touches to the mold before pulling the prototypes.

The car's front end is fully enclosed in a bullet-like nose with two vents in the rear to enable trapped air to escape. The body flares at the rear to divert air up and over the large rear CKW* Drag Foams on Fine Design* wheels and to provide the necessary down-force to keep the slicks firmly planted; this is accomplished without using a conventional overhead wing and without enlarging the car's frontal aerodynamic profile! An upright vertical stabilizer—a "rudder" for straight-line stability—is at the rear of the car. Shades of Craig Breele and the "Blue Flame" land-speed-record car, the body has been finished with Pactra's* Pearl White and Candy



CKW's new Drag Foams on Fine Design wheels, which feature snap-in wheel caps, are in the rear. The microswitch throttle setup is mounted on the motor pod top plate; the batteries can be moved as far back as possible for rear traction.

Blue, and it's secured with a single, nifty, Viztion Racing Components clip-less body post.

I chose an Astro Flight* Top Fuel II 5-turn drag motor to power the new digger. The latest Astro Flight motors feature turned armature stacks for better balance (this results in increased rpm) and huge, beefy commutators that don't need as much maintenance as motors with smaller commes and thinner comm plates. These rather large motors can be immediately identified by the brush-containing "ears" that stick out of each side of the endbell. These ears make mounting an Astro Flight motor in a tight motor pod a bit of a challenge. I recommend that you drill and tap several additional motor-screw mounting holes around the perimeter of the endcap so that you can rotate the motor until the ears are out of the way.

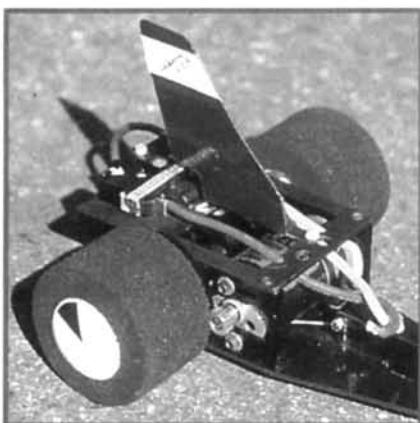
I attached Kimbrough's* full-width spur gears directly to the wheel hubs without a differential. I used heavy-duty, 12-gauge wire throughout, and, if you look closely at the photos, you'll see that the negative motor lead has been looped around the back of the rear pod and attached to the throttle switch with a single Astro Zero-Loss connector. This is strictly a safety item—a "ripcord" that you can unplug to disable the car as soon as the run is over. If you've ever had a 20-cell car suddenly scream to life wide open in your hands when you picked it up (first, the tires blow off, then the motor free-wheels until the comm explodes, then the batteries sizzle and pop out of their shrink-

wrap), you'll appreciate this little feature.

This car will make its shakedown passes at the IEDA Worlds in Clinton, NC. I expect



The front end is a unique "inboard" front-wheel setup that only has about 5 degrees of throw each way, but with minor corrections, it's sufficient for straight-line runs. To reduce weight, I used a Futaba* S-133 steering micro-servo.



An Astro Flight Top Fuel II drag motor has been shoehorned into the rear pod of the Lockmann dragster chassis. The rear track is kept as narrow as possible for straight-line stability and reduced wind drag.

it to eventually dial in to the mid-1.70-second range at more than 80mph in the 132-foot scale quarter-mile.

*Here are the addresses of the companies mentioned in this article:

Lockmann Precision, 17344 Eucalyptus Bl, Hesperia, CA 92345.

Rausch Racing 2505 Samara Dr., Riverside, CA 92504. **Protoform**, 537 Niagara St., St. Catherines, Ontario, Canada L2M 3P6; (416) 646-7658.

CKW Mfg., 1889 W. Commonwealth, Unit 1, Fullerton, CA 92633.

Fine Design & Mfg., 2 North St., Middletown, NY 10940.

Pactra Inc., 620 Buckbee St., Rockford, IL 61104. **Astro Flight Inc.**, 13311 Beach Ave., Marina Del Rey, CA 90292.

Kimbrough Products, E. St. Andrews Place, Unit F, Santa Ana, CA 92705; (714) 557-4530.

Futaba Corp. of America, 4 Studebaker, Irvine, CA 92718; (714) 455-9888.

TROUBLESHOOTING

by JOHN HUBER

Illustrations by Steve Collins

If you have a technical problem that your hobby shop or racing friends can't resolve, give us a shout at Radio Control Car Action, and we'll see if we can chase down an answer for you. Questions should be of a technical nature and should be addressed to Troubleshooting, Radio Control Car Action, 251 Danbury Road, Wilton, CT 06897. We regret that, owing to the tremendous number of letters we receive, we can't respond to every one.

Outlaw Stripper

I recently acquired a Kyosho Outlaw Ultima Stadium Racer, and I've been having trouble with the transmission. First, the outer gears (the small gear on the counter gear and the center gear) stripped. I replaced them with stock parts, but they stripped again, so I installed a set of Thorp underdrive gears. After just a couple of

laps, the final pinion gear on the inside of the transmission had stripped; again, I replaced it with stock parts and, again, it—and the counter gear—stripped.

The entire tranny is supported by new bearings. I've been using a 16x2 4WD off-

road Mega motor, and I have an Ultima ball diff that I plan to install when I've figured everything else out. Note: the last two times, the tranny broke on a set of triple jumps when I came up short. Any info would be greatly appreciated!

**Mat Thomas
Montezuma, IN**

Mat, I think your problem has more to do with the triple jump than with the gears. When you land off a big jump at full throttle, your wheels are spinning faster than they ever could on the ground, and they stop suddenly when you dig in on landing. This puts a massive amount of strain on the gears.

You need a slipper clutch. Though, if set correctly, I think the ball diff would help you get a little slippage, a slipper clutch is the correct solution. This way, if you have a hard landing at full throttle, the slipper will give—not your gears.

Now for the bad news: nobody makes a slipper for your tranny. You'd have to use an A&L Lethal Weapon or a Kyosho Triumph tranny.

Ah...Diff is Looff

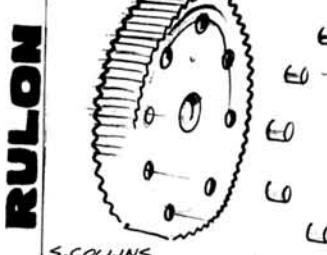
My Traxxas TRX-1 has a problem with its differential. Whenever I try to tighten it, the diff just loosens all by itself. If it helps, I have a Trinity Championship Series Speed Metal motor and a Novak 610-RV speed controller.

One more thing: will the Rulon pegs in the slipper ever have to be replaced and, if so, when? The instruction manual doesn't really say anything about maintaining them. Thank you very much for your time.

**Chris Manakas
Valparaiso, IN**

If your diff keeps loosening, replace the diff screw, and put a little thread-lock (242) on the new one. As for the Rulon pegs, they should be replaced if they're worn. Remove the slipper plates and look at the gear. If it looks as if the plates are

rubbing on the gear, the pegs are probably worn. The gear should have a bit of play between the plates with new pegs.



Permanent Cell Damage

During the past four years, nine battery packs have mysteriously given out on me. I'd charge each pack until it just began to feel warm, but when I went to use it, it was as if it hadn't taken the charge at all. One pack even melted its shrink-wrap and leaked! Also during this time, the transformer has given out three times. I sent the charger back to be serviced

twice, but it was returned with a note saying that there's absolutely nothing wrong with it.

I soon got fed up with all the problems and ruined packs. I bought a different brand of charger and invested in three Sanyo Cadnica SCR packs to replace the ruined SCs. Will these packs give out and seemingly not accept a charge, too? Why does this happen? After destroying nine packs, I'm worried.

I'm a racer on a budget, and replacing battery packs all the time isn't cheap!

*Vincent Grovestine
Shelburne, Nova Scotia, Canada*



NOT!! You have me scratching my head! My first question may sound stupid, but is the polarity correct on the charger and the battery packs? If it is, you must have had bad packs. If one cell goes bad, it can short out the pack and make charging and running difficult. Open the pack's shrink-wrap, and measure each cell's voltage with a digital voltmeter. You shouldn't have a problem with your new packs, but use the voltmeter to monitor voltage while you're charging.

Seal it up!

I recently bought a Kyosho Rampage with a .12 CZ-R engine. I've run about 15 to 20 tanks through it now, and it's starting to give me problems. It appears to be leaking from the carburetor boot around the throttle linkage, or maybe the front main bearing/seal. I'm having trouble running it longer than four or five minutes before it stalls out and is very hard to start. I can see air bubbles in the fuel line between the carb and fuel tank. The engine has the stock 2BK carb, a Kyosho exhaust and a Kyosho dual-element air filter. I'm sure the needle and air screws are set right. This stalling has me going bonkers. Help!

*Art Bartlett
Las Cruces, New Mexico*

three turns. The tubing should take care of any leaks there.

Use silicone to seal the rim of the boot, and put it around the base of the carb as well. And make sure that your pressure line is good and that the fuel filter is clean.



Art, you can do a couple of things to help prevent leaking. First, cut a 1/4-inch-long piece of silicone tubing. Remove the main needle and slide the tubing onto the needle assembly as far as you can. Now thread the needle all the way in and then out

TROUBLESHOOTING

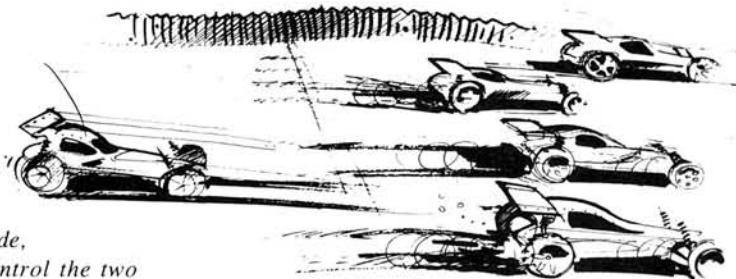
About Face

I own an RC10 Championship Edition car that's controlled by a Futaba FP-2NCS radio. It has a Novak M5 speed controller and an FP-R112JE receiver. To make my car go forward, I have to push down—reverse—on the throttle. I asked at my local hobby shop what I'm doing wrong, and they say I need a radio with servo-reversing. Can you please help me?

Jon Carmack
Hickory, NC

To remedy the problem, you'll have to perform some simple surgery. Are you ready, Dr. Jon? Remove the radio's back cover. Inside, you'll see the two gimbals that control the two channels. You just have to remove the throttle gibal and

rotate it 180 degrees. Make sure that you don't stretch the wire that connects the gimbals with the printed-circuit board. And that's it! The trim lever will be on the inside now, but at least you'll be able to drive the car correctly.



STEVE COLLINS '93

In A Bind

I recently purchased a Traxxas Nitro Hawk. It runs well, but the brakes aren't working too well; it takes about 6 or 7 feet to slow down enough to make it around corners. Is there anything I can do to make the brakes work better?

One more question: whenever I turn on my Airtronics XL2P, the steering servo (an Airtronics 94737) makes a weird humming noise, but when I turn the wheels, it stops. I just don't know what's wrong with it.

Corbitt Shoffner
Searcy, AR

For more stopping power, you need a stronger throttle servo, such as the one you use for steering, or a 94151.

And as for the humming noise, it's normal, but it might be a sign of binding. Disconnect the servo, and check to see how free the steering linkage is. If it's binding,

the problem is probably caused by the bellcranks. You might want to consider a ball-bearing bellcrank for your truck. Also, check the steering-rod ball ends; if they're too tight, they'll also cause binding.



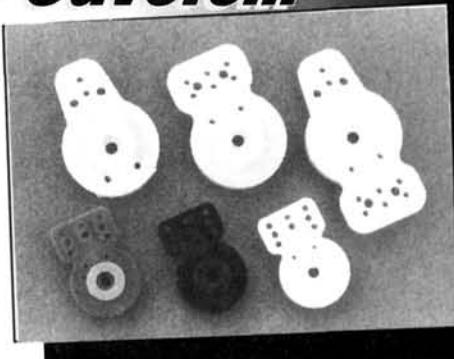
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- #113 KO, Airt. (23-Spline Drive)
- #114 Futaba, (25-Spline Drive)
- #121 Large, (21, 23, or 25 Spline)
- #122 Large, Double-Ended
(21, 23, or 25 Spline Drive)
- #123 Large, Small end
(21, 23, or 25 Spline Drive)

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READERS' RIDES

"Readers' Rides" is our way of recognizing the unique, innovative—and sometimes bizarre!—vehicles that our readers have created. Send us a sharp, uncluttered, well-exposed color photo of your car or truck (no Polaroids, please!), along with a brief description, to Readers' Rides, R/C Car Action, 251 Danbury Rd., Wilton, CT 06897. If the Ayatollah of Radio Controllers chooses your photo, you'll receive a 6-month subscription to Car Action, or an extension of your existing subscription. You'll also be eligible for the fourth annual "Reader's Ride of the Year Contest" in the fall of 1994. Write your address and phone number on your letter and on the back of each photo you send, in case we need to contact you.



GAS 'N' GO

This trick-looking Associated Super Speedway 10L is owned by Rich Rebenock of Willowick, OH. It's equipped with a Tekin 411P speed controller, a Trinity Slot Machine motor, Sanyo 1700 pushed cells held in place with Pure Tech battery straps and a trimmed Bud's bi-level wing. For pavement pounding, Rich added a set of TRC foams and radial wraps.



FRENCH FLYIN'

Florian Lacroix of Chelles, France, sent us this photo of his two Traxxas TRX-1s—the front-runners of the Chelles Traxxas Team. The cars are equipped with SMT 14-turn triples, Novak 410 M1c and 410 MXc speed controllers, a Futaba 3UCP and KO Propo's EX-1 with 1001 servos. According to Florian, we're getting a look at the two best cars in the French league.



MINI-RACER

Kyle Spurgeon's RC12LW has been modified with a Trinity Green Machine stock motor, a Tekin 408 Sport ESC and an Airtronics XL2P radio system and 94102 steering servo. The body was painted and detailed by his uncle Galen Meyer, who is a former R/C champion. Kyle writes, "This car really screams, and with a little more experience, I plan to start racing at a track near my house." It's sharp-looking, Kyle. Good luck, and have fun.



WILD 'FOOT

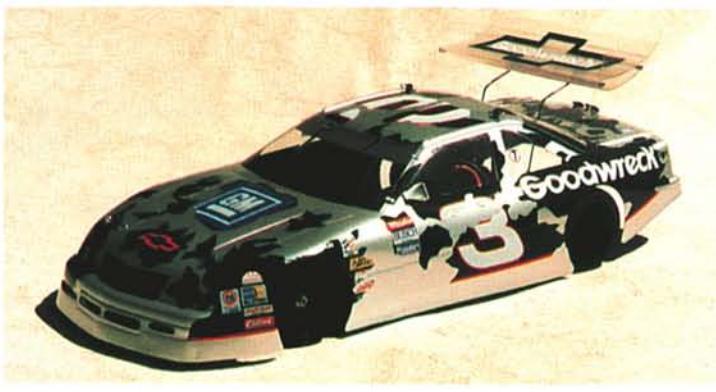
This Blackfoot was transformed into a monster when Robert McGuire of Lambertville, NJ, modified his stock 'Foot with an aluminum chassis, a Thorp diff kit with telescoping drive shafts, a Novak 410 M5 ESC, four Trinity oil-filled shocks, a Twister Pocket Rocket motor and Pro-Line chrome wheels. Robert's friend Bob, who also has a Blackfoot, painted the body for him. Both of them enjoy racing their trucks at a track in Flemington, NJ.

READERS' RIDES



BODY BY TODD

Todd White of Clarksburg, WV, sent us this photo of his ultra-clean Associated RC10T. Todd equipped it with a Magnum Sport radio and a Futaba receiver and servo. A Reedy Outlaw stock motor powers the truck. Todd informs us that he painted the body by referring to pictures in our magazine. Nice job, Todd!



FREQUENT FLYER

This interesting-looking 10LSS comes from Kevin Meyer of Westminster, CO. Kevin modified the car with a graphite chassis, a Tekin 410s ESC and a mini-receiver, Associated's new front end and miscellaneous graphite parts, TRC tires, an HPI lower aero brace and a T&A titanium axle. Other mods include a Trinity Green Machine stock motor, a Sanyo SCR 6-cell pack and a Protoform body. The car is controlled by Futaba's Magnum Jr. radio and S132H high-speed servo.



Magnum Sport radio with help from a Futaba MC210B ESC and S148 servo.

STOCK CAR?

Even though his car is totally bone-stock, Waldy Santos, who lives in the Philippines, loves to drive his Kyosho Williams Renault FW14. Apparently, Waldy plans to modify his car soon with a set of ball bearings and a modified motor. The car is controlled by a Futaba

PROPAH PUMPKIN!

Longtime R/C enthusiast David Nemeth of Hackettstown, NJ, has owned this Tamiya Midnight Pumpkin for more than eight years. The truck is equipped with working headlights, taillights and fog lights; a sun visor and a bug shield; Sees aluminum wheels; a Novak 410 ESC; and a Futaba Magnum Sport radio. As a finishing touch, he added the rear wing and painted it to match the truck. Nice job, David.

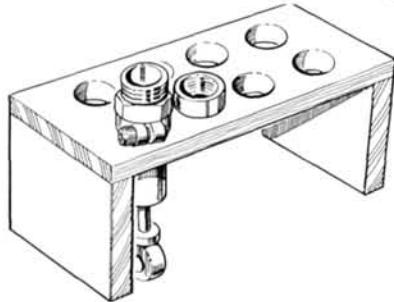


BAD BULL

Keith Rullman of Feeding Hills, MA, attempted to replicate the box art of his stock Tamiya Bullhead. We think he did a pretty good job! According to Keith, the truck is totally stock except for a high-torque steering servo. Apparently, Keith's forte is racing 1/12- and 1/10-scale oval at the K/N Speedway in Stafford Springs, CT.

PIT TIPS

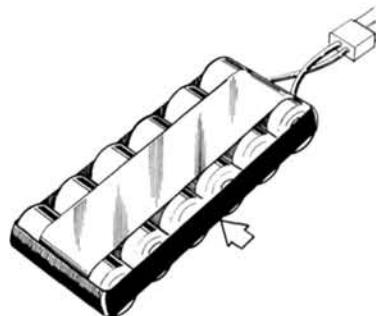
by JIM NEWMAN



SHOCK-SERVICING STAND

Make this shock stand out of 1x4-inch scrap lumber, allowing room for the piston rods to hang underneath. Eight holes will accommodate four shocks and four shock caps.

John Rucker, San Diego, CA



INSULATED NI-CD ENDS

Short circuits can be hazardous. If your Ni-Cds have exposed ends, wrap a couple of layers of electrician's tape around the pack as shown.

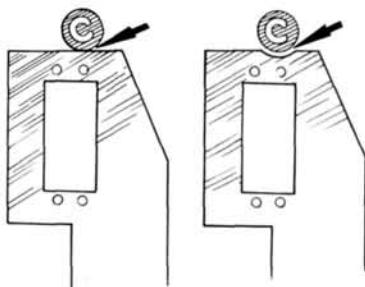
Jack Faenza, Gillette, NJ



MOTOR DIRT SCREEN

Keep dirt out of your motor with microphone foam rubber (Radio Shack no. 33-373). Use a rubber band to hold it over the end of your motor, and your motor will stay a lot cleaner. This dirt screen is washable, too.

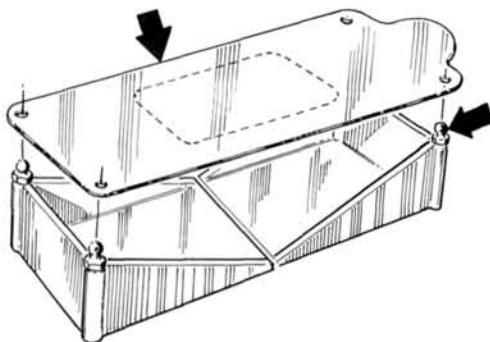
Michael Knapic, Bow Island, Alberta, Canada



SUPER SERVO-SAVER

If your Pirate's servo-saver catches on your aluminum radio tray, remove it, then file away a little of the tray to allow enough clearance.

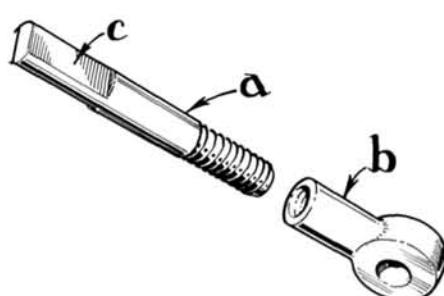
George Samae, Edmonton, Canada



BATTERY RETAINER

Hold your batteries in place with a soft, plastic retainer cut out of a plastic lid. In the retainer's corners, punch very small holes that match the positions of threaded ball links that are screwed into each corner of the battery cups. Be sure to make a large pull tab at one end, and secure the retainer tightly over the batteries.

J.D. Stenzel, Stanton, NE

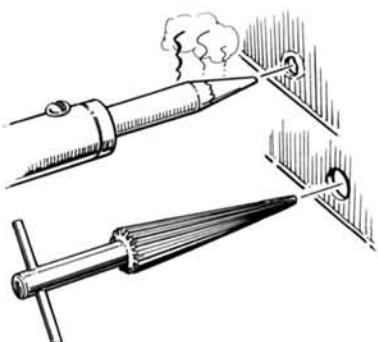


SHOCK-TAPPING TOOL

Make this shock-tapping tool out of a spare shock-absorber shaft (a) by filing flats on it (c). Instead of just twisting your shock shafts with pliers to thread them into the shock ends (b), hold your new tool with pliers, and twist it to tap the shock end before you try to install it on the good shock shaft.

Jeff Tham, Atlanta, GA

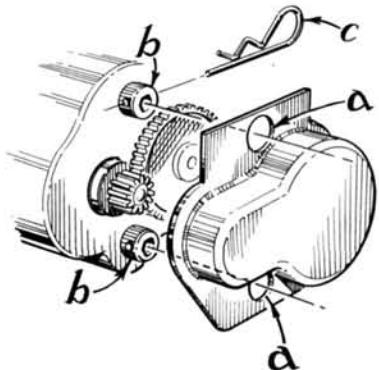
PLEASE NOTE: be sure to print your name and full address clearly on every letter and sketch you send to "Pit Tips." We can't publish many good tips because we don't have the senders' names or addresses.



NEATER BODY-MOUNTING HOLES

If your drill slips when you're drilling the body shell, you could seriously damage it. To avoid this risk, instead of drilling it, use the tip of a soldering iron to melt a small hole, and then open this further with an inexpensive, tapered, hardware-store reamer.

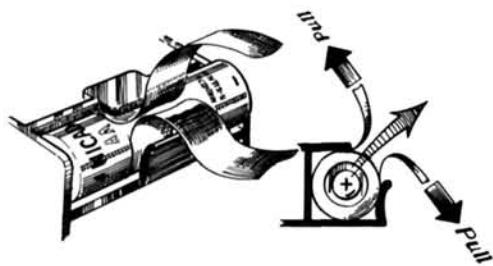
Kathy Fitzgerald, Placerville, CA



QUICK-RELEASE GEAR COVER

Enlarge the holes (a) in the gear cover to make them fit over the socket-head screws (b). Drill holes in the heads of the screws so that you can hold the cover on with body clips. To access the gears quickly, just pull out the clips.

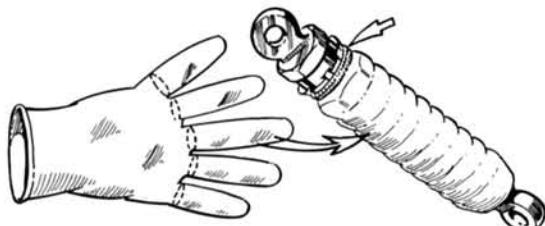
Bill Yocum Jr., Ashland, OR



EASY CELL REMOVAL

Before fitting your AA cells into the battery holder, wrap a short piece of tape around each one, as shown. To remove a cell, pull on the ends of the tape, and it will pop right out.

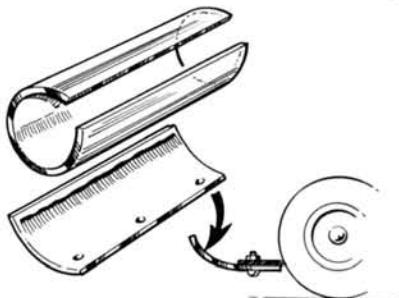
Terrence Nimegeers, Prince Albert, Saskatchewan, Canada



SHOCK BOOTS

Protect your shocks from dirt by making them a set of rubber boots! Cut the fingers off a latex glove, snip a small hole in the tip of each, then stretch one finger over each shock, securing the open ends with a small rubber band.

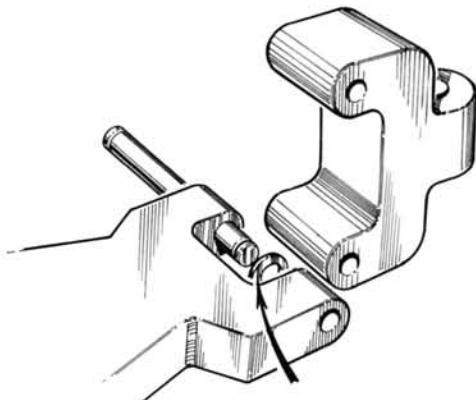
Lloyd Roberts, Turner, OR



FLEXIBLE BUMPER

Make a flexible bumper/skidplate for your RC10 out of PVC hardware-store tubing. Cut the tubing as shown, flatten it a little, drill a few holes, then screw it to the front of your graphite chassis.

Lodewyk Steyn, Waterkloof Ridge, Pretoria, South Africa



WHEEL-WOBBLE CURE

If your RC10's wheel carrier has a lot of slop, it can make your wheels wobble. Remove the carriers and insert washers to take up the play.

Rodney Orsat, Santa Fe Springs, CA

by Frank Masi

SURE, THE BIG $\frac{1}{8}$ -scale 4WD buggies are impressive to watch and to drive, but for many, they're just plain too expensive. I'm not saying that they're overpriced—you get a lot of technology for your dollar—but there are ways to experience the fun of nitro off-road without making such a substantial commitment. For one, several manufacturers offer attractively priced sport versions of their $\frac{1}{8}$ -scale racing buggies. Also, you could try converting that old LX-T or RC10T to gas. But suppose that you

don't have one of these trucks to convert, or that you don't have lots of space to run in? If this applies to you, I've got something of interest! It's the new 4WD Kyosho* Inferno 10, and it's not a cheesy remake of an old electric car design, but a $\frac{1}{10}$ -scale version of the world champion $\frac{1}{8}$ -scale Inferno buggy, true to almost every detail!

SEASON TO TASTE

The basic premise behind the Inferno 10 is to allow people with no nitro experience to get in on the fun easily. You don't *really* need R/C car

experience to enjoy this kit, but some prior knowledge would be useful; or at least you should enlist the aid of someone with an R/C car background before you start building the kit.

Because Kyosho realizes that the intended buyers of the Inferno 10 might be on tight budgets, the kit purposely lacks full ball bearings and comes with molded, Kelron shocks. To me, this makes the kit more enticing, because its lower price cuts a few weeks off the time it takes to save up enough money for it, and you can

KYOSHO

INFERNO



always add the necessary ball bearings and upgrade the shocks later.

You can get the kit either with or without an O.S. CZ-R .12 engine. If you opt for the latter, you'll get everything you need to get started, including the engine (with pull-starter), manifold, clutch, flywheel and tuned pipe. If you already have an appropriate engine, buy the basic kit, and you'll only have to buy the manifold and pipe; everything else is included.

Ihe Inferno 10 is the $\frac{1}{10}$ -scale offspring of the popular and successful $\frac{1}{8}$ -scale Inferno family. The Inferno hit the U.S. shores late in the summer of '92, and since then, it has cut a wide swath through the competition worldwide.

The $\frac{1}{8}$ -scale Inferno is powered by a .21-size engine and is larger and heavier than the Inferno 10 buggy. With its additional horsepower and extra mass, the big Inferno is more stable and is capable of higher speeds.

If you want the excitement of $\frac{1}{8}$ scale but are short of cash, Kyosho offers an entry-level version of its Inferno. The Inferno DX has most of the Inferno's features, but it lacks metal shocks and ball bearings, and it doesn't have the Inferno's excellent dual-disk brake setup.

The Inferno ST is a stadium-truck version of the DX. With its larger wheels and tires and great-looking truck body, the ST closely resembles a full-size Mickey Thompson racing truck.

The Inferno 10's Family Tree



NO 10

TOS BY WALLY CAHILL

Burnin' Down



the
House

WORTHY OF THE THRONE

As mentioned before, the "little Inferno" is a fairly accurate, though diminutive, replica of the big Inferno buggy. The drive trains of both cars are virtually identical.

Inside molded cases at the front and at the rear of the car are sealed, mitre-gear differentials. The front and rear diffs are connected through dogbone-type drive shafts and a center-mounted diff—also of the mitre-gear variety. I was confused, too; Kyosho calls 'em "mitre gear," but I call them "bevel gear."

Attached to the center diff there's a neat brake disk that's actuated by a pivoting cam and two pressure plates. This setup works well, but the dual-disk system found on $\frac{1}{8}$ -scale buggies provides more controlled stops. Let's see if someone will offer such a system for the Inferno 10 in the future.

The main chassis plate, the radio tray, and the front and rear shock towers are made of aluminum. The blue-anodized chassis looks great. With the radio tray, it makes a pretty rigid structure. The Inferno 10's 4W independent suspension has long, molded A-arms and adjustable upper camber links. The camber links and steering rods are made of molded rod ends and steel turnbuckles. The turnbuckles allow easy and precise adjustment without removing the rod. The suspension arms' assembly was this kit's Achilles' heel; the hinge pins were difficult to press into place, and once assembled, there was a lot of binding in the arms. To ensure smooth operation, I had to grind some material away from the arms.

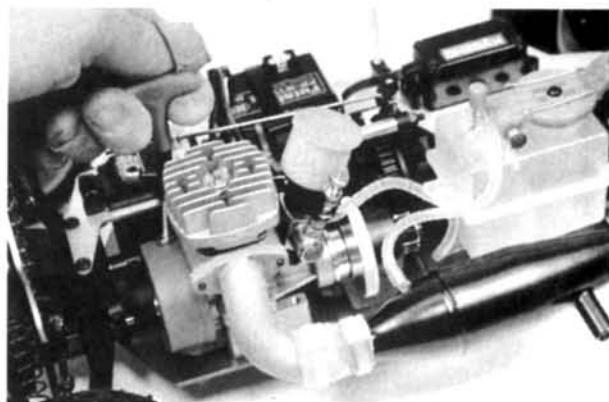
SHOCKS 'N' STUFF

Though not made of metal, the shocks actually work quite well. Their Kelron bodies were precisely molded, and the pistons fit well. On the subject of pistons: Kyosho provides several types from which to choose. If you use the kit-supplied shock oil (the green stuff!), install the "one-notch" pistons both front and rear. The spring pre-load adjusters are stepped, and they fit around small protrusions on the shock body. By rotating the adjusters, you can alter spring pre-load. One of my shocks developed

a chronic leak after I had filled it with oil. I've yet to correct this messy problem, but it's probably just a torn O-ring seal.

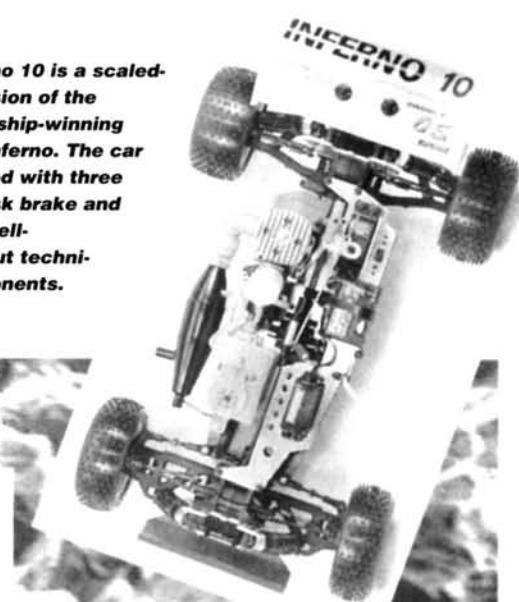
The radio tray is designed to hold all the car's electronics, i.e., the servos, the receiver and the battery pack. Because the tray can easily be removed, cleaning and maintaining the Inferno 10 is a snap. I attached my Airtronics* 94152 steering servo and my Futaba* S9301 throttle servo to the tray using the supplied screws and molded mounts. When doing this, use the little rubber grommets that come with the servos to help minimize the ill effects of engine vibration. I mounted my Futaba FP-R112J receiver on the top of the tray, then I strapped the battery holder, with its four AA cells, directly underneath using the supplied, reusable tie-strap.

The Inferno 10's body looks much like that of the big Inferno. I sent mine out to Mort Flint Jr. at Outrageous Paint* for the stunning job you see in the photos. A one-



The kit is available with or without a pull-start O.S. CZ-R. If you go the "with" route, everything you need to get going is included in the kit—pipe, manifold, clutch and flywheel.

The Inferno 10 is a scaled-down version of the championship-winning $\frac{1}{8}$ -scale Inferno. The car is equipped with three diffs, a disk brake and a ton of well-thought-out technical components.



KYOSHO INFERNO 10

Scale $\frac{1}{10}$
Price (with engine) \$499.99

DIMENSIONS

Overall length 16 in.
Wheelbase 10.75 in.
Front width 9.25 in.
Rear width 9.5 in.

WEIGHT

Gross (ready to run) 3 lb., 12 oz.

CHASSIS

Type Plate
Material Blue-anodized aluminum

DRIVE TRAIN

Primary Spur/pinion/clutch
Transmission Gear
Differential(s) Mitre gear
Bearings/bushings Bushings

SUSPENSION

F/R: Type Lower A-arms with upper control link
Damping Oil-filled coil-over shocks

WHEELS

Front: Type One-piece plastic
Dimensions (DxW) 2.22x1
Rear: Type One-piece plastic
Dimensions (DxW) 2.22x1.25

TIRES

Front I-pattern mini-spike
Rear I-pattern mini-spike

POWERPLANT

Engine O.S. CZ-R .12
Pipe Kyosho tuned-pipe
Carb Rotary

OPTIONS TESTED: Futaba Magnum AM radio with a S9301 servo for the throttle and an Airtronics 94152 servo for steering; Byron Originals Race 2000 (20-percent-nitro) fuel.

HITS

- Fairly simple design; easy assembly.
- Good value; lots of performance for the price.
- Highly "tuneable" chassis that can be easily upgraded.

MISSES

- Suspension arms bound when assembled.
- Plastic shocks instead of metal ones.

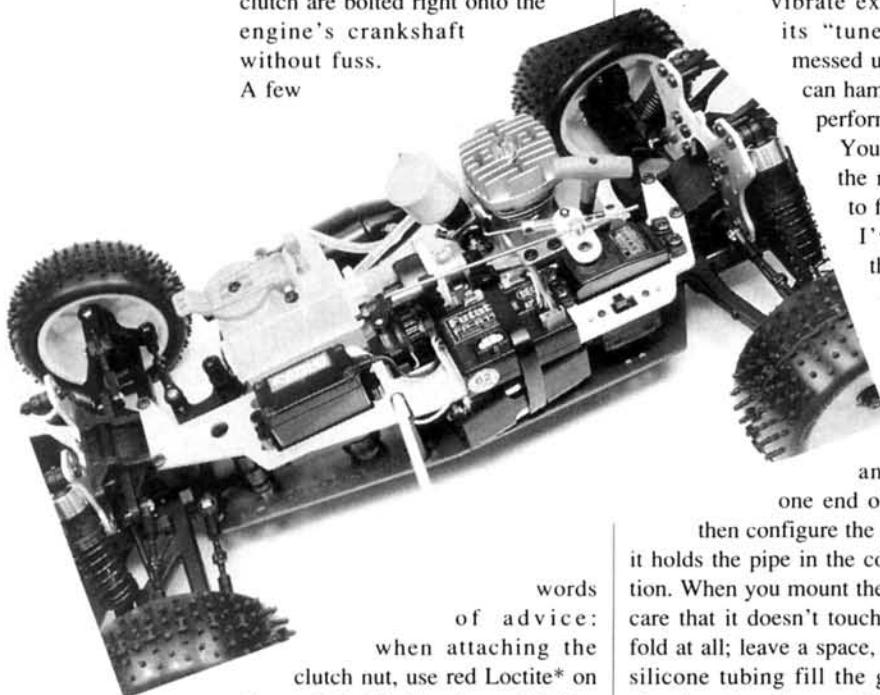
INFERNO 10

piece, molded wing comes with the kit, and it seems to be durable enough to withstand anything I'll throw at it.

MOUNTING THE ENGINE

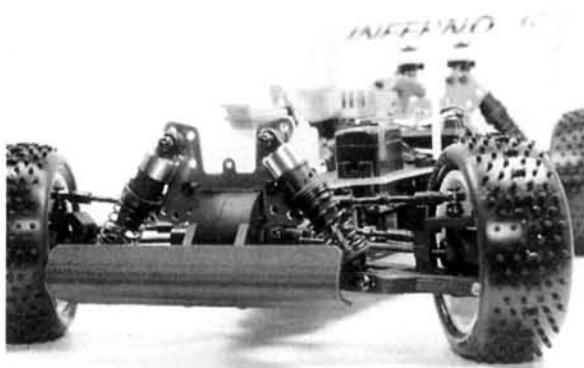
My Inferno 10 kit came with an O.S. engine, and mounting it couldn't have been easier. The flywheel and clutch are bolted right onto the engine's crankshaft without fuss.

A few



Don't be scared! The car's layout may seem somewhat cluttered, but it's easy to work on. The radio tray holds all the electronics and can easily be removed for maintenance.

words of advice: when attaching the clutch nut, use red Loctite* on the crankshaft's threads, and tighten the nut well! If your engine has a pull-starter, you must install small spacers between the engine case and the engine mounts to raise the engine enough to allow clearance for the starter. I looked and looked, but I couldn't find the spacers in my kit, so I used the little red spacers that are molded on the same runner as the shock pistons.



As in the rear of the car, a set of Kelron molded shocks mounted on an aluminum shock tower provides the damping. If you grab too much throttle and get into "crash-up-derby" mode, the burly front bumper should help minimize damage.

The exhaust manifold is simply bolted to the engine, and that made installation easy. The pipe is then connected to the manifold with a piece of silicone-rubber tubing. It's important to attach the pipe to the chassis firmly with the included music wire, because if the pipe is allowed to vibrate excessively, its "tune" can be messed up, and that can hamper engine performance.

You must bend the music wire to fit the pipe.

I've found that the best way to do this is to use two pairs of pliers. Form

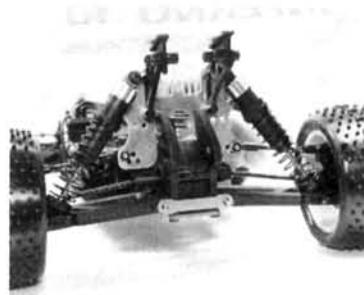
an eyelet at one end of the wire,

then configure the rest so that it holds the pipe in the correct position. When you mount the pipe, take care that it doesn't touch the manifold at all; leave a space, and let the silicone tubing fill the gap. If the pipe touches the manifold, it can cause glitching when the engine is run.

TAKING THE FIRST FEW STEPS

I filled the flip-top fuel tank with Byron's* 20-percent-nitro Race Fuel, attached my glow-plug igniter and gave the pull-starter a few yanks. After only five or six pulls, the little O.S. fired and idled quietly. I was impressed with this; I guess the factory pre-sets the carb adjustments. For the first two or three tankfuls, you want a new engine to run rich, i.e., to have a higher percentage of fuel in the fuel/air mixture. You'll know the mixture is rich enough when acceleration is slow and the exhaust emits a telltale plume of dark blue smoke.

After the break-in period, you can begin to lean out the mixture. You'll notice a definite improvement in performance! The Inferno 10 was an absolute blast to drive. The piercing sound of its engine and the exceptional traction provided by its efficient 4WD system make for loads of fun, both off-road and, believe it or



To keep costs down, the Inferno 10 comes with molded Kelron shocks. Even though the shocks are considered to be of an entry-level style, I found they work quite well.

not, on pavement, where I did some of my testing. Off highway, though, the suspension travel is adequate but not as effective as that of a 2WD electric racing buggy. The Kelron shocks worked well, and the car performed adequately over all but the largest obstacles, where the suspension had a knack of bottoming out violently.

AN ALL-AROUND NICE GUY!

Overall, Kyosho has done an admirable job of engineering and manufacturing the Inferno 10. In stock form, you never feel that this is an all-out racer—but that's OK; it isn't supposed to be. But it never lets you down, either.

The tough chassis and suspension components took a beating without whimpering, and the O.S. engine ran like a clock for the nearly two dozen tanks of fuel used during the tests. I'm also sure that, by adding a few hop-ups, such as full ball bearings and better shocks, and removing the pull-start mechanism, you could make the Inferno 10 nearly as fast on the track as a larger, $\frac{1}{8}$ -scale buggy.

But I don't want to give away too much of what's to come in our "Project Inferno 10" feature; you'll have to stay tuned to learn more!

*Here are the addresses of the companies mentioned in this article:

Kyosho/Great Planes Model Distributors, P.O. Box 9021, Champaign, IL 61826; (217) 398-6300.

Airtronics Inc., 11 Autry, Irvine, CA 92718; (704) 830-8769.

Futaba Corp. of America, 4 Studebaker, Irvine, CA 92718; (714) 455-9888.

Outrageous Paint, 115 Fourth St. Ext., West Glens Falls, NY 12804; (518) 423-5486.

Loctite Corp., 4450 Cranwood Ct., Cleveland, OH 44128.

Byron Originals, P.O. Box 279, Ida Grove, IA 57445.

HOW TO Fuel-Proof Your Car

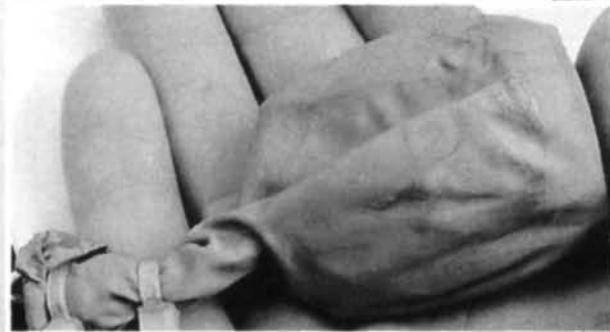
No Fuelin' Around!

by JOHN HUBER

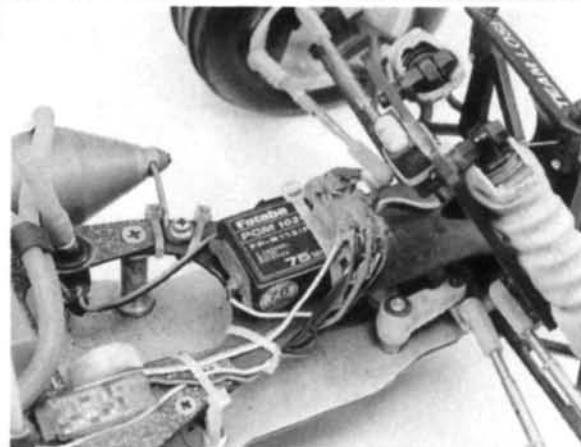
Although it's important to get fuel to your engine, it's also important to keep the fuel out of your electronics. Like water, fuel can cause a serious problem in your receiver that could take you out of a race. You might be very careful with your fueling, but you can't control your excited pit person as you come in for the last pit. There are, however, some ways to protect your electronics.



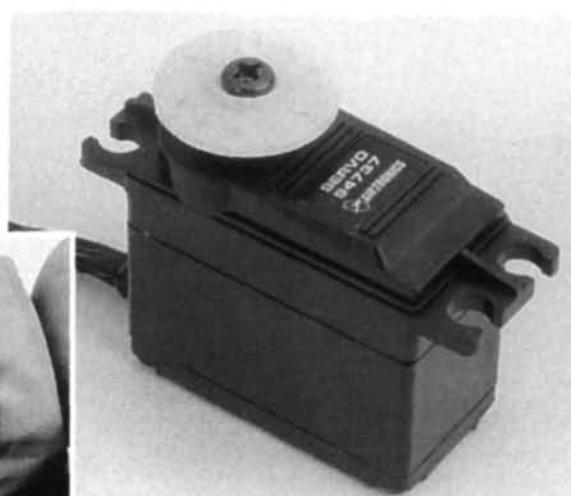
2 With the silicone in place, it will be almost impossible for fuel to penetrate the receiver. But just to be sure, you can take other steps. For example, a balloon stretched over the receiver will prevent damage from most mishaps.



3 If you want to be 100-percent sure that no fuel will get into your receiver, here's what you can do. Insert the silicone-sealed receiver in a balloon. Use a tie-wrap to close the neck of the balloon around the wires. Then add a little silicone to the wires where they exit the balloon. Pull the rest of the balloon's neck over the silicone, and add another tie-wrap. You're now ready for monsoon racing!



1 Apply silicone liberally to the connectors where they enter the receiver. A remote crystal plug will make life easier. Try to seal every edge and gap, and don't forget the tops of the plugs and the antenna exit. Just to be sure, I also cover the seam in the case with silicone. Use a soapy finger to mold the silicone as desired, and let it dry overnight. If you need to remove plugs later, the silicone can be cut and ripped off easily.



4 Most good servos are fuelproof and waterproof. You can bolster this by applying silicone where the wires exit the servo and over the tops of the screw heads. If you have any battery plugs, seal them as well. ■



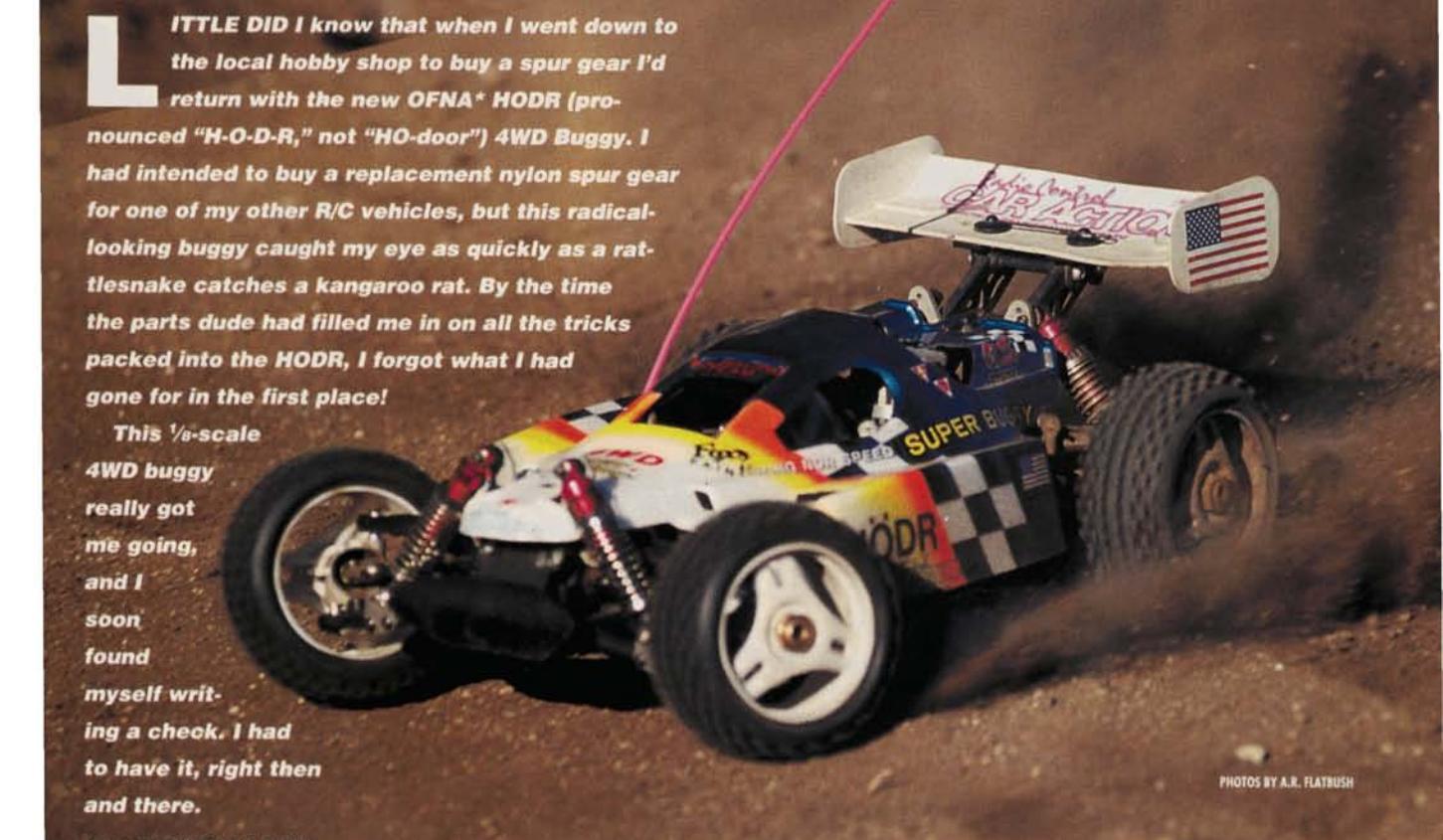
OFNA **HODR**

AFFORDABLE AND RACEABLE

by A.R. FLATBUSH

LITTLE DID I know that when I went down to the local hobby shop to buy a spur gear I'd return with the new OFNA* HODR (pronounced "H-O-D-R," not "HO-door") 4WD Buggy. I had intended to buy a replacement nylon spur gear for one of my other R/C vehicles, but this radical-looking buggy caught my eye as quickly as a rattlesnake catches a kangaroo rat. By the time the parts dude had filled me in on all the tricks packed into the HODR, I forgot what I had gone for in the first place!

This $\frac{1}{8}$ -scale 4WD buggy really got me going, and I soon found myself writing a check. I had to have it, right then and there.



PHOTOS BY A.R. FLATBUSH

JUST HOW TRICK IS IT?

When I opened the kit box, I couldn't believe my eyes. The HODR has impressive features that include full diff and wheel bearings; oversize anodized-aluminum shocks with square-wire springs and threaded preload collars; an adjustable rear sway bar; long suspension arms; dual brake system with carbon disks; a quick-fill fuel tank; front universal drives; three planetary-gear diffs; hardened pinion and (small) drive bevel gears; three-spoke racing wheels; aggressive knobby tires; a 6061 aluminum chassis; quick-access diff cases; and a foam air filter. It even comes with a plastic under-chassis "stone guard." With some other kits, you'd have to spend an extra \$75 for the exhaust manifold and tuned pipe, but the HODR comes with those, too!

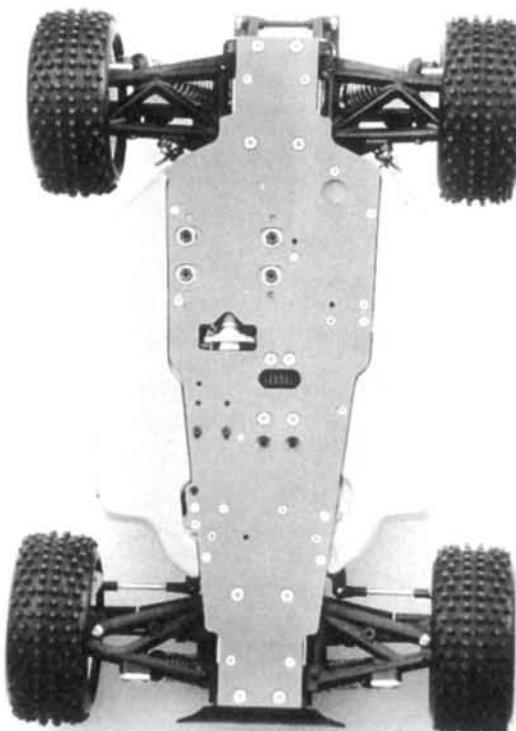
On top of that, the HODR has an adjustable wheelbase, rear toe-in, front anti-squat and front caster, as well as the usual camber adjustments.

What the HODR doesn't come with are a .21 buggy engine, a fuel filter, a 2-channel radio system, a receiver battery pack, a glow plug, a starter, or a manual that's easy to understand. The manual's illustrations are good, but the text's Chinese-to-English translation is poor. For example, under "tools needed for assembly," the manual lists "paint" instead of "paint." So, just to keep things painless, let's walk through the assembly steps and talk about the individual components along the way.

SHOCK SETUP

I use Loctite Blue on all metal-to-metal connections on my nitro vehicles, and I suggest that you use some in the very first step.

Before assembling the shock shafts, I trimmed all the flashing off the shock pistons; then I put thread-lock on the 2.6mm piston retaining nut before I tightened it. Put a drop of oil on the long, threaded end before you insert the shaft into the shock body (from the top). This prevents you from damaging the seals on the threads. Then thread on the lower shock mount while you hold the shaft nut with a wrench.



I found the chassis to be a little on the flexible side. I reinforced it by running a fiberglass rod from the front shock tower to the rear shock tower, and the flexing disappeared.

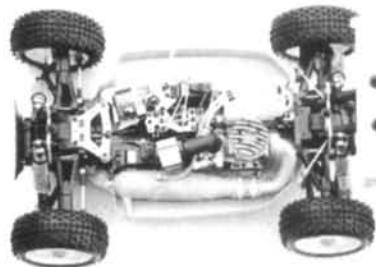
This prevents you from gouging the shaft with pliers.

Be sure to pump each piston and tap the shock bodies to release all the air bubbles before screwing on the caps! I'm really impressed with the HODR's standard shock setting for rough tracks. On smoother, hard-packed tracks, the OFNA silicone cap seals and optional Yellow springs provide better hookup.

DIFFERENTIAL ASSEMBLY

The three diffs have nearly identical parts and are assembled in the same way, but the front and rear diffs have bevel drive gears, while the center diff has a straight-cut spur gear. Use the "B" diff cases for the front and rear and the "C" cases for the center. Be sure to pay close attention to the schematic drawings, or you may install the small "sun" gears backwards.

Because our track has so little traction, I packed all the diffs with grease until it shot out of the seams when I assembled the cases. This tightens the diff but it can take away from the car's steering response on tight, loamy tracks. Be sure to secure the four case screws with Loctite before tightening them into the 44-tooth drive bevels.



Hopping Up the HODR

As trick as the stock OFNA HODR is, there's always room for improvement. Optional alloy parts help stiffen the chassis and improve overall performance. These optional parts are available through OFNA Racing.

HODR Optional Parts List

| Part | No. |
|---------------------------------|---------|
| Hardened large bevel gear | AS-1 |
| Carbon brake disk (2) | AS-2 |
| Inner sponge (2) | AS-3 |
| Steel spur gear | AS-4 |
| Special nylon spur gear | AS-5 |
| Alloy diff housing (2) | AS-6 |
| Special hardened chassis | AS-7 |
| Anodized shock stay (front) | AS-8 |
| Anodized shock stay (rear) | AS-9 |
| Alloy half-shaft (2) | AS-10 |
| Alloy rear drive shaft (2) | AS-11 |
| Alloy center drive shaft (2) | AS-12 |
| Bearing servo shaft (2) | AS-13 |
| Polycarbonate body | AS-14 |
| Hard-anodized front shock (2) | AS-14-2 |
| Hard-anodized rear shock (2) | AS-14-3 |
| Special (FEMCA no. 502) muffler | MO-1 |
| Wing joint (3) | AS-16 |
| Alloy suspension arm holder (4) | AS-17 |
| Alloy servo mount (2) | AS-18 |
| Alloy engine mount (2) | AS-19 |
| Alloy fuel-tank mount | AS-20 |

There's a correction in the manual for the brake actuator arms; be sure to position the pointed end to the outside so that the long, flat side is facing the diff. This will give you the most braking power. Again,



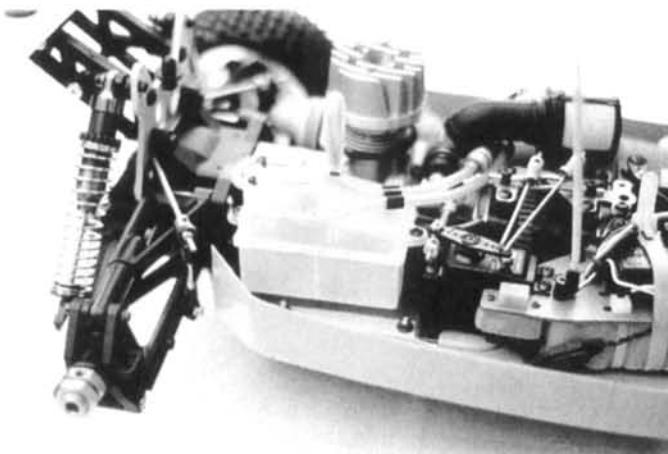
The OFNA HODR 1/8-scale buggy has trick racing features and an entry-level price tag.

when building the front and rear gearboxes, be sure to apply thread-lock to all out-drive setscrews.

COMPLETING THE FRONT END

Depending on how you place spacers on the upper A-arm's inner pin, you can tune the caster angle of the HODR's steering. You can also adjust the "lower suspension holder," or toe-in bar. The adjustments give you a caster of 15 to 17.5 degrees. Along with camber, toe-in or toe-out, shock mount and ride-height settings, you can really dial the HODR for any track.

The manual recommends that the upper A-arm be set up with a 1mm gap between it and its ball end. This gives you zero camber. I set it up with a 0.5mm gap so that my car would have some negative camber to help with high-speed cornering. For more steering in slow turns, I set the caster at 17.5 degrees by placing the appropriate spacers in front of the upper A-arms. It was necessary to trim the steering blocks so that they would clear the front hub carrier.



The fuel tank comes with holes on the flip-top lid so that you can run a zip-tie through it for an easy pit-stop access handle.

OFNA HODR

SCALE 1/8
Price \$475

DIMENSIONS

Overall length 15.1 in.
Wheelbase 12.8 to 13 in.
Front track 10.1 in.
Rear track 10.1 in.
Width 12.1 in.

WEIGHT

Gross (w/batteries) 7 lb., 7 oz.

CHASSIS

Type Aluminum plate

DRIVE TRAIN

Type Gear/shaft-driven 4WD
Primary Pinion (clutch bell) and spur
Differential(s) Planetary (3)
Bearings/bushings Sealed ball

SUSPENSION

F/R: Type Upper and lower A-arms
Damping Oil-filled, coil-over shocks

WHEELS

Front: Type Molded spoke
Dimensions (DxW) 4.125x2 in.
Rear: Type Molded spoke
Dimensions (DxW) 4.125x2 in.

TIRES

Front HODR pin-spike
Rear HODR pin-spike

POWERPLANT

Engine O.S. RF-B .21
Pipe Hong Nor Speed
Carburetor O.S. slide valve

OPTIONS TESTED

Futaba 2PBKA; Futaba 9301 and S148 servos; Futaba R112JE receiver; five Sanyo 650mAh cells; Futaba on/off switch; O.S. exhaust adapter no. 4 (part no. 22826130); Hayes fuel filter (no. 028); Deans four-plug connectors; OFNA ABS wing (part no. 16007).

HITS

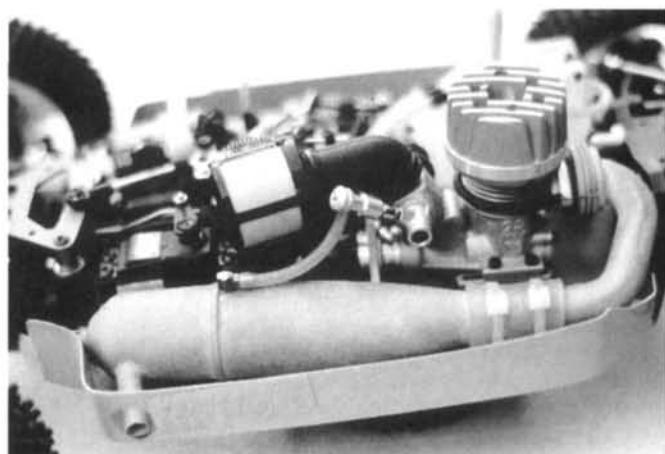
- Excellent shocks • Full bearings • Adjustable caster and toe-in • Front universal joints • Hardened drive bevel gears • Pipe and manifold included • Stone guards • Flip-top fuel tank • Air filter included • Excellent handling

MISSSES

- Manual could be better • Chassis has no raised edges to stiffen it • Servo-saver arms are weak • Experienced help needed for some assemblies

REAR SUSPENSION AND SWAY BAR

The rear end is designed to use spacers to set the wheelbase (320mm or 325mm) for tight or high-speed tracks. The rear toe-in bar has inserts that you can quickly flop from 1 degree of toe-in (tight courses) to 2 degrees (high-speed corners). By sliding the



A tuned pipe and manifold (which would usually set you back about \$75) are included in the kit. I chose an O.S. .21 RF-B engine.

.12 VS. .15 Nitro Engines

Does Size Really Matter?

by EDWARD PLATT

NOW THAT gas-powered vehicles have their foot in the door as far as racing is concerned, many questions are being asked about the rules and class structure. This is especially true of the popular $\frac{1}{10}$ -scale gas trucks. The question that's asked most often probably is: "Should I use a .12- or a .15-size engine?" I think that both have their place in this segment of the R/C hobby.

I WANT MORE HORSEPOWER!

I know what most of you are thinking: the .15 engines are bigger, so they must be faster; why not use them? Well, they are faster, but they may be too fast for the average racer. A .15 engine produces so much horsepower for a small $\frac{1}{10}$ -scale car or truck that it's darn-near impossible to use it all. Although the .12 engines are slightly slower, they produce plenty of flat-out, "break the tires loose" horsepower.

Of course, there's a price for all that speed. The .15 engines are usually more

expensive than the .12s. Don't get me wrong; there are a few .12 engines on the horizon that will have larger price tags. They'll be the first of many .12s designed for all-out competition, and most of these engines will have a .15 big brother that will be more expensive. The bottom line is the same as always: just how much do you want to spend to go fast?

PROS AND CONS

There's more to picking an engine than deciding how fast you want to go. For

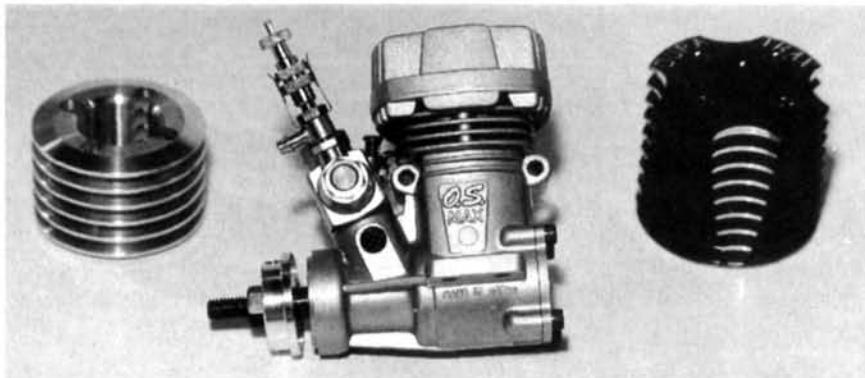


New, high-performance .12s, such as this one from O'Donnell, are on the way. They are designed for competition and will also have higher price tags than standard .12s.*

instance, the .15 engines are much heavier than the .12s. In fact, some .15s are almost as heavy as the .21 engines! This can cause handling problems, especially with off-road cars and trucks. With trucks, it's difficult to distribute the weight correctly because of the suspension components. Getting the engine far enough to the rear of the truck is a never-ending battle. If the engine weighs more, the problem gets worse.

Parts availability is another thing to take into consideration when you choose an engine. You usually need parts to rebuild gas engines. The piston and the sleeve should be changed fairly frequently to keep the engines performing at their best. There are more .12 engines available, and it's easier to find the parts for them. This is because most of the kits that include engines come with .12s. Also, many of the parts on the .12s are interchangeable with those on other engines.

The bigger engines are easier to tune and to run. Remember this basic rule of thumb: the bigger the engine is, the easier it is to keep it running. It can be difficult to get the correct needle setting on gas



Unless your engine comes with a large cooling head, it's a good idea to replace the standard heat-sink head.

PHOTOS BY EDWARD PLATT

CARB CHOICES

Not only are there different sizes of engines, but there are also different types of carburetors. Barrel and slide carburetors are the most popular types. Each has advantages and disadvantages. For the most part, barrel carbs are easy to work with. They're reliable and require little fuss once you've adjusted them. The barrel carbs are the most common with .12 and .15 engines.



The barrel carb (left) and the slide carb (right) are the two most popular carbs for .12 and .15 engines.

Slide carbs come from the .21 racing engines that are used in 1/8-scale cars. These carbs are pretty much the standard in the .21 engine market. A few manufacturers offer slide carbs for smaller engines.

The biggest difference between the two types of carbs is in their bottom-end acceleration. When the barrel carb is opened quickly, it creates a vacuum that draws the fuel more quickly and makes acceleration faster. Slide carbs have a slightly broader adjustment range on their high and low needles. This is good for racing, but it can be tricky for a first-time user.

If you're new to gas cars, the barrel carbs are slightly easier to adjust. If you're using a conversion kit, check the instructions for information about the carb linkage. Some kits are designed for only one type of carb, so the linkage can be tricky to set up if you use a different carb.

engines, especially for races that last 20 minutes or longer. The .15s are almost always easier to tune in and are easier to keep running. Because the parts have more surface to wear, .15s will almost always outlast smaller .12s.

Under the same conditions, .15 engines run slightly cooler than the .12s because the .15s have more surface area for heat dissipation. Regardless of which engine you choose, adding a larger cooling head is strongly recommended. These heads have much larger fins and a bigger surface area, and they really help to cool the engine.

THAT'S ALL FINE, BUT WHICH ONE SHOULD I USE?

If you're looking for an engine for your little nitro-guzzling rocket, take all of the facts mentioned here into consideration. If speed is your main concern, don't forget that you can always add tuned pipes to both sizes. When the engines are running all out, tuned pipes will make .12s and

.15s faster. If you plan to race, go to the track and check out the engines that other racers are using. Don't be afraid to ask questions; some good advice from a fellow racer can save you hours of aggravation.

i.e., if a racer suspects someone of cheating, he should be able to purchase the questioned engine for a set price. This price would obviously need to be set to discourage people from buying someone's engine



The .15 engine (left) has a larger piston and sleeve than the .12 engine (right).

On the other hand, if you just want to play in a park, a field, or a backyard, then check with your local hobby shop to see which engine they recommend. When it's time to service your engine, it helps if they have the necessary parts.

As far as the racing classes and rules are concerned, I feel that there's a place for both engines. The classes could be set up like the electric classes. The .12s could be used for the equivalent of stock class; this would keep the cost down for newcomers; however, strict rules should be placed on the modifications that are allowed. Maybe there could be a "claimer" rule,

just to save money.

The .15s could be used in a modified or unlimited class. This would be similar to the modified class in electric racing. The cost would naturally be higher, but the cars or trucks would be faster. After-market engine builders could have team drivers show their stuff without affecting newcomers in the .12 class.

Whichever engine you choose, be sure that it's made by a reputable manufacturer and that replacement parts are available in your country. One thing is for sure, whether it's a .12 or a .15, you're in for a lot of R/C fun.

**Here are the addresses of the companies mentioned in this article:*

O'Donnell Racing, 10702 Hathaway Dr., Santa Fe Springs, CA 90670; (213) 944-9671.

RPM, 14978 Sierra Bonita Ln., Chino, CA 91710; (714) 393-0366.

O.S./Great Planes Model Distributors, P.O. Box 9021, Champaign, IL 61826; (217) 398-6300. ■



Various brands of .12 engines have interchangeable engine components, such as pistons, sleeves and rods. The RPM* rod (left) and the O.S.* rod (right) will fit in most .12 engines.

1/8-Scale vs. 1/10-Scale

Nitro Choices

by GEORGE GONZALEZ

THERE'S NO DOUBT that gas-powered R/C cars and trucks are the latest frenzy to hit the industry. Just about every major R/C manufacturer now has a gas-powered R/C vehicle in their lineup. So why all the hoopla? It's the sound and the smell of nitro, man! Plus, if your transmitter batteries and fuel supply hold out, you can run a gas car as long as you want. If you've decided to take the plunge and get into gas-powered R/C, there's one more thing you should consider: which scale— $\frac{1}{10}$ or $\frac{1}{8}$ —is right for your skill level and budget?

SO WATCHA WANT?

Your goal should be to buy the car that will give you the most mileage, therefore, the most use. Both $\frac{1}{10}$ - and $\frac{1}{8}$ -scale cars offer the thrill of nitro power, but they're completely different animals, and one might suit you better than the other. Here are the highs and the lows of the two most popular gas scales.

1/10 SCALE

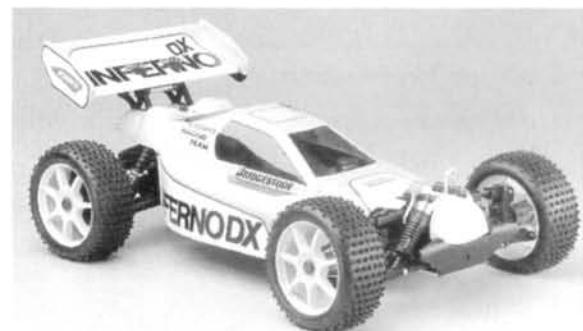
Although $\frac{1}{10}$ -scale gas off-road racing is still relatively new, it's catching on like

wildfire, and many R/C companies are gearing up for the demand. At the '93 Kyosho World Challenge in Detroit, the $\frac{1}{10}$ -scale racing-truck class involved more than 30 percent of the racers competing, and it was one of the most exciting classes at the event.

Kyosho recently introduced the gas-powered Inferno 10—a scaled-down



The Traxxas Nitro Hawk was one of the first $\frac{1}{10}$ -scale gas race trucks. It's available as an assembled kit only, and it can be purchased with all radio gear installed.



Most $\frac{1}{8}$ -scale manufacturers offer entry-level buggies, such as this Kyosho Inferno DX, that are essentially the same as their top-of-the-line buggies, except they come with bushings instead of bearings, plastic shocks instead of metal ones, etc.



If you like trucks on a larger scale, check out an $\frac{1}{8}$ -scale stadium truck. Most $\frac{1}{8}$ -scale buggy manufacturers offer a stadium truck version as well.

version of the world champion $\frac{1}{8}$ -scale Inferno, and OFNA has introduced the Cobra Model 2. Now that 4WD has been added to the $\frac{1}{10}$ -scale gas arena, it's only a matter of time before $\frac{1}{10}$ -scale gas becomes as diverse as $\frac{1}{10}$ -scale electric. Traxxas, Associated, Kyosho and Schumacher all offer race-worthy, $\frac{1}{10}$ -scale gas-powered R/C cars and trucks. In addition, companies such as DuraTrax, Moody Automotive and A-Main Racing offer excellent conversion kits



If you get an $\frac{1}{8}$ -scale buggy or truck, you'll need a starter box or a wheel starter. If your $\frac{1}{10}$ -scale vehicle isn't equipped with a pull-starter, you'll need a starter box or a wheel, too.

GETTING STARTED

There are many $\frac{1}{10}$ - and $\frac{1}{8}$ -scale gas-powered cars and trucks on the market, and the list of accessory options is just as long. The best way to determine what's right for you is to take a look at all your options. The '94 R/C Car Action Buyers' Guide is the best place to start because it lists most of the available cars and accessories as well as the distributors' phone numbers.

To give you an idea of what it costs to get into gas racing, I came up with this list of products and accessories. The prices listed are approximate retail values.

$\frac{1}{10}$ SCALE

| | |
|--|--------------|
| Traxxas Nitro Hawk 2WD racing truck with .12 pull-start engine | \$495 |
| Airtronics XL2P pistol-grip radio with receiver and two 94102 servos | \$160 |
| Sanyo 4-cell AA receiver battery pack | \$16 |
| $\frac{1}{2}$ gallon of Blue Thunder 15-percent-nitro fuel | \$16 |
| Thunder Tiger 11480 glow-starter with charger | \$25 |
| Dynamite .12 glow-plug MC9 power plug (pack of two) | \$8 |
| Total | \$720 |

$\frac{1}{8}$ SCALE

| | |
|--|--------------|
| Mugen Sport 7 4WD racing buggy with .21 pull-start engine | \$558 |
| Airtronics XL2P pistol-grip radio with receiver and two 94102 servos | \$160 |
| Airtronics 94152 high-torque steering servo (recommended) | \$140 |
| DuraTrax 5-cell 600mAh receiver battery pack | \$30 |
| $\frac{1}{2}$ gallon of Blue Thunder 15-percent-nitro fuel | \$16 |
| Thunder Tiger 11482 (long-reach) glow-starter with charger | \$26 |
| Dynamite .21 glow-plug MC9 power plug (pack of two) | \$8 |
| Total | \$938 |

that will transform your RC10T or LX-T into an extremely competitive, nitro-powered racing truck.

One-tenth-scale cars offer several advantages over $\frac{1}{8}$ -scale cars:

- Most $\frac{1}{10}$ -scale gas cars are based on their popular electric cousins and, as a result, their wheels, their tires and many of their chassis and suspension components are interchangeable.

- Unlike $\frac{1}{8}$ -scale gas cars, $\frac{1}{10}$ -scale gas cars can be run on virtually the same tracks as $\frac{1}{10}$ -scale electric. (Most $\frac{1}{10}$ -scale tracks are too small for $\frac{1}{8}$ -scale vehicles.) Though more experienced $\frac{1}{8}$ -scale buggy drivers have little trouble piloting their cars on small tracks, most of us need



Kyosho also makes a scaled-down monster truck—the Nitro Thrasher—that comes with a pull-starter for people who want to conveniently crush smaller cars.

from entry-level to hi-zoot pro models. In addition, many R/C manufacturers offer a wide range of after-market hop-up

parts that can transform your $\frac{1}{8}$ -scale car into a world-class contender.

Here are some benefits of being big:

- $\frac{1}{8}$ -scale cars are more sophisticated than most $\frac{1}{10}$ -scale cars. Most $\frac{1}{8}$ -scale cars use extremely complex drive trains; this distributes 4WD power through three separate gear diffs.

- $\frac{1}{8}$ -scale cars use extremely efficient



This $\frac{1}{8}$ -scale Kyosho USA-1 is one option for all those car-crushing fanatics out there who want a monster truck—not a stadium truck or a buggy.

more room so we can lay down the power!

- Most $\frac{1}{10}$ -scale gas cars are easier to set up and maintain than $\frac{1}{8}$ -scale; this makes them better for first-time racers.
- $\frac{1}{10}$ scale is more economical than $\frac{1}{8}$ scale.

$\frac{1}{8}$ SCALE

This scale of gas off-road racing has been around longer than $\frac{1}{10}$ -scale gas, and it's extremely popular in Europe and Japan. These overpowered 4WD land missiles have been known to catch some serious air time, and driving them is a real "white-knuckle" experience. Companies such as Mugen, Kyosho, BMT, Serpent, OFNA and now Crono offer an extensive line of $\frac{1}{8}$ -scale cars and trucks—



Eighth-scale cars have brutal amounts of horsepower, 4WD, high-tech disk-brake systems, and they're capable of reaching more than 50mph speeds.

disk-brake systems; some have adjustable front-rear bias.

- $\frac{1}{8}$ -scale cars are larger and heavier than $\frac{1}{10}$ -scale cars. Their greater size and weight, combined with 4WD traction, makes them handle very well on all track surfaces.



WHY GUESS?

Check your toe-in or out fast and easy within a half degree per side, without taking anything apart!

7049
TOE-IN GAUGE

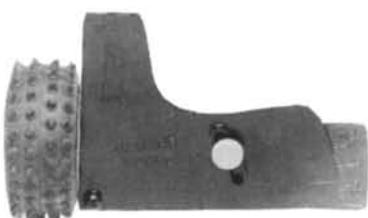
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Designed for cars and trucks, On- or Off-road. Also checks legal width for Off-road cars and trucks.



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No more guessing, now you can check, or set the camber easily and accurately on any car or truck.



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Used with our popular **Camber Gauge**, you will have the ultimate in tune-up tools and that extra winning edge.

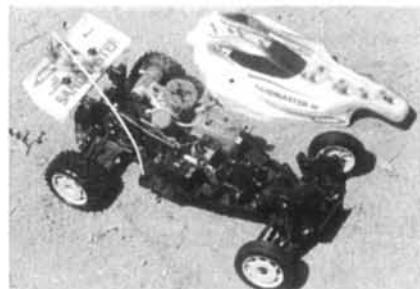
1/8 VS. 1/10 SCALE



Conversion kits, such as this DuraTrax kit for the Associated RC10T, incorporate the best of both worlds—the awesome handling of an electric truck with the excitement of nitro power.

• The 3.5cc, .21-size powerplants that protrude from the bodies of $\frac{1}{8}$ -scale cars produce enough power to get them quickly up to speeds in excess of 50mph.

In a nutshell, $\frac{1}{8}$ -scale vehicles are larger, heavier, louder and generally faster, and they can stop more quickly than $\frac{1}{10}$ -scale cars and trucks can.



Not into trucks? How about $\frac{1}{10}$ -scale buggies? Traxxas and Kyosho make a couple of screamers that fit into the entry-level category all the way up to full-blown racecars.

COMPARING APPLES TO ORANGES

As you should know by now, $\frac{1}{10}$ - and $\frac{1}{8}$ -scale gas each have distinct advantages. It's best to stick with the class that's popular in your area, as well as what's popular with your racing buddies. (The last thing you want to do is to buy a car or truck that you can't race.) It's also important to buy a vehicle that's on a par with your skill level; don't buy a car or truck that's beyond your building and driving skills. Also, be sure to buy a car that fits your budget. You can always buy an entry-level car and hop it up as your skill and money allow.

I hope that you're now better prepared to make a logical choice. As I mentioned earlier, both $\frac{1}{10}$ - and $\frac{1}{8}$ -scale vehicles can give you a dose of "nitro fever," so watch out; there's no known cure for this ailment.

Send \$2 for a complete catalogue.

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14978 Sierra Bonita Lane, Chino, CA 91710**



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360+ 6Cell \$39.95**

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Elite Speed Products

THE KYOSHO Mid-Atlantic Gas Challenge was held on October 8 through 10 at Paul Covington's awesome PC Hobbies—a new off-road facility in King, NC. It featured some very intense racing action in three classes. As usual, there were 1/8-scale Buggy and 1/10-scale Truck classes, but this time around, 1/8-scale Stadium Truck was thrown into the works for some extra excitement. After the qualifying orders had been arranged, the Mains kicked off on a sunny Sunday afternoon.

In the 1/10-scale Truck A-Main, top qualifier Scott Moody immediately grabbed the holeshot and was soon closely followed by Kyosho's Kris Moore and Chris Walrod, both piloting the new Outlaw Rampage Pro. Bill Jeric, Bobby Beard and Chris Smith were in hot pursuit. The first 8 minutes of the 15-minute Main saw Moore and Moody vying for the lead, but then mechanical difficulties put Moody out of contention. Moore later slipped off the pace and allowed Chris Walrod to gain the lead and, eventually, the win.

The 1/8-scale Stadium Truck A-Main was a total blast! There's no doubt that the new class was every spectator's favorite event. With his Mugen truck, TQ'er Derek Furutani grabbed an early lead and was followed by Tom Grogg and his Kyosho and Oscar Guerrero's Mugen. Halfway through, Furutani flamed out and lost the lead to Guerrero, who was relentlessly pursued by Tom Grogg. Furutani salvaged third overall, while Guerrero held off Grogg for the win.



Top qualifiers (left to right):
1/8-scale Stadium Truck TQ,
Derek Furutani, 1/8-scale Buggy
TQ, Brian Kinwaid, and 1/10-scale
Truck TQ, Scott Moody.



A-Main winners (left to right): 1/10-scale Truck—Chris Walrod; 1/8-scale Buggy—Matt Ledger; 1/8-scale Stadium Truck—Oscar Guerrero.



**HEY,
IT'S THE
KING!**

by John Howell

kyosho Gas Challenge

KYOSHO'S OUTLAW RAMPAGE PRO

Kyosho's Kris Moore and Chris Walrod raced two near-production Outlaw Rampage Pros. They were very impressed by the truck's on-track handling, and the rest

of us were impressed by their finishing A-main positions: Walrod took the win, while Moore placed fourth.

If you haven't seen it yet, here's the deal: the truck is entirely new—not a rehash of the old Rampage. The Pro's top features include a blue-anodized aluminum chassis, an SST-GP three-gear transmission and a 75cc fuel tank.

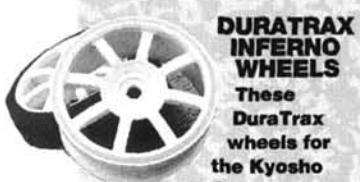
The kit will be offered in two versions: a race version that comes with ball bearings and Kyosho's new Ultimate hard-anodized aluminum shocks; and a sport version that comes with Kyosho's Black shocks and a pull-start O.S. CZ-R. Giddyup!



What's New at the Track?



researching the market and are unsure of the truck's future. Apparently, at the Losi headquarters, the list of potential projects keeps growing, and they have to prioritize. The "Experimental" will resurface in Hemet, CA, for the West Coast Gas Challenge, in which a few of their top drivers will pilot the truck. We'll let you know of any further developments.



DURATRAX INFERNO WHEELS

These Duratrax wheels for the Kyosho Inferno are

lighter and more rigid than the stock units. The wheels come in three colors: white (DTXC3900), pink (DTXC3901) and yellow (DTXC3902).

TEAM LOSI "EXPERIMENTAL"

The big question is: what about Team Losi's "Experimental" gas racing truck? Will it become a reality? Well, according to Team Losi, they're still



DURATRAX 1/8-SCALE TIRES

By now, these new 1/8-scale Duratrax tires should be rippling up tracks all over the country. From left to right: the

Step-pin (no. DTXC8267), the Micro-pin (no. DTXC8265) and the X-block (no. DTXC8255).

With all the other A-Mains in the bag, it was time for the big guns to come out and play in the 1/8-scale Buggy A-Main. With his new Mugen Athlete, TQ'er Brian Kinwald grabbed the holeshot, but was closely pursued by Kris Moore. Unfortunately for him, Moore blew his rear diff early on and was stuck with only front-wheel drive. That didn't stop him from staying in the front of the pack, though. At about halfway, Kinwald developed engine trouble and was relegated to sixth overall. Driving an Athlete, Mugen's Matt Ledger charged from the back of the pack all the way to the lead. Ledger ran a flawless race; he was never marshalled, never crashed and never flamed out. He was on a tear, and he was the only one who turned 137 laps in the 45-minute A-Main.

Stadium Trucks



Eight-scale 4WD stadium trucks are definitely the latest rage among nitro aficionados! Their trick-looking bodies and realistic-looking wheels and tires give them a very scale look. These trucks—the Mugen Super Sport Toyota Pickup, the Kyosho Inferno ST and the OFNA Blazer SST—are based on their .21-powered 1/8-scale buggy siblings' chassis and driveline systems. When these ground-pounders hit the track, they demand attention!

At the King event, the rules were fairly basic and designed to ensure fun: drivers had to run stock tires, wheels, body, and that was it. Their taller tires and wheels give the trucks a slightly higher center of gravity than buggies, and—unlike their buggy brothers—they don't quite drive as if they're on rails. But, hey; that makes them more challenging. Also, when these trucks cruise around the track, they really do look like their full-size counterparts. It's a wild sight. Check it out!

1/8 4WD BUGGY

| Fin. Qual. Name | Chassis | Engine | Pipe | Fuel | Radio | Tires |
|------------------------------|---------------|----------------------|--------------|---------------|------------------|--------------------|
| 1 ... 3 ... Matt Ledger | Mugen Athlete | Rex 3-port | Paris | Mu-Juice | JR-Propo R-756 | Fuzzies |
| 2 ... 2 ... Kris Moore | Inferno | Paris Picco | Paris AL650 | 20% O'Donnell | KO EX1 | Kyosho BSW47 |
| 3 ... 5 ... Chris Walrod | Inferno | O.S. RXB Dremel | AL650 | O'Donnell | CS-2P | DuraTrax Mini-pins |
| 4 ... 4 ... Derek Furutani | Mugen Athlete | Rex 3-port | Paris | Mu-Juice | Airtronics CS-2P | Pro-Line |
| 5 ... 9 ... Brian LaVigne | Inferno | Paris Picco | Paris | Blue Thunder | KO EX1 | Kyosho |
| 6 ... 1 ... Brian Kinwald | Mugen | Rex | Picco | Mu-Juice | Airtronics CS-2P | Fuzzies |
| 7 ... 10 ... Frank Calandria | Crono | Serpent Mega | Serpent | Flamingo | JR Propo | Kyosho |
| 8 ... 7 ... J.D. Beckwith | Mugen | Rex | Paris | Mu-Juice | Airtronics CS-2P | Kyosho Fuzzies |
| 9 ... 6 ... Larry Plank | Mugen | Rex | Paris | Mu-Juice | Airtronics | Pro-Line |
| 10 ... 8 ... Les Dickerman | Crono Sport | Cipolla 3-port buggy | Paris AL-650 | 20% Mu-Juice | Airtronics XL2P | Kyosho BSW47 |

1/10 TRUCK

| Fin. Qual. Name | Chassis | Engine | Pipe | Fuel | Radio | Tires |
|----------------------------|--------------------|-----------------------|-----------------|-----------------|------------------|----------------------------|
| 1 ... 3 ... Chris Walrod | Kyosho Prototype | O.S. C2-R Dremel | Paris | O'Donnell | CS2P | Losi |
| 2 ... 7 ... Bill Jeric | DuraTrax/Losi | O.S. 12 CZ-R | O'Donnell | KO | KO | Losi |
| 3 ... 8 ... Bobby Beard | Traxxas | O.S. C2-R, 12 | Kyosho/DuraTrax | B. Thunder | Futaba | Pro-Line |
| 4 ... 6 ... Kris Moore | Kyosho Proto | O.S. C2-R | Paris | O'Donnell | KO EX1 | Losi (rib/step-pin) |
| 5 ... 9 ... Mark Shaw | A-Main Conv | O.S. C2-R | Paris Sport | Bl. Thunder/20% | Futaba PCM | Assoc. (f) XTR (r) |
| 6 ... 5 ... Chris D. Smith | RC10 DuraTrax Conv | O.S. C2-R (Leake 300) | Paris | Red Max FHS | Futaba PCM 1024 | PPro 92 (r) Pro 65 (f) XTR |
| 7 ... 10 ... Dave Sproul | DuraTrax/Losi | O.S. 12 CZ-R | DuraTrax | O'Donnell | KO | Losi |
| 8 ... 4 ... Mike Bills | LXT | RMS Prafa | RMS/Paris | 20% O'Donnell | CS-2P | Minif |
| 9 ... 1 ... Scott Moody | A-Main-RC10T | OFNA/Leake | AL1105 Paris | Red Max | Futaba | |
| 10 ... 2 ... Allen Lost | RMS/Losi | RMS/Prafa | RMS/Paris | O'Donnell | Airtronics CS02P | Losi |

1/8 STADIUM TRUCK

| Fin. Qual. Name | Chassis | Engine | Pipe | Fuel | Radio | Tires |
|----------------------------|-------------------|------------------|--------------|-----------|------------------|--------|
| 1 ... 3 ... Oscar Guerrero | Mugen | Rex 3-port | Mugen | Mu-Juice | Airtronics CS-2P | Stock |
| 2 ... 2 ... Tom Grogg | Kyosho Inferno ST | O.S. 21 RX-B | Paris AL 650 | O'Donnell | KO | Kyosho |
| 3 ... 1 ... Derek Furutani | Super Sport ST | Rex 3-port Both | Mugen | Mu-Juice | Airtronics CS-2P | Mugen |
| 4 ... 5 ... Dave Sproul | Kyosho Inferno ST | DuraTrax SRT .21 | DuraTrax | O'Donnell | KO | Kyosho |
| 5 ... 7 ... Larry Lutz | Mugen | O.S. | Paris | O'Donnell | Futaba | Mugen |
| 6 ... 4 ... Bill Jeric | Kyosho Inferno ST | O.S. EX-B .21 | Paris AL650 | O'Donnell | Futaba | Kyosho |



THE PROCAR World Series, held from October 8 to 10 at PC Hobbies in King, NC, was the place to be for superspeedway racers. Almost \$15,000 in purse money and prizes was up for grabs, with \$5,000 to go to the winner of the Pro A-Main. Also available for the taking were the championship titles in Sportsman Stock, Formula America and the Pro Division.

The Sportsman Stock Class saw top qualifier Art Lucas jump to an early lead, followed quickly by Tony Baldwin and Richard Bostic. At the 40-second mark, Baldwin was involved in a minor mishap and was unable to continue, as was Jamie Tennies. Craig Martin, who was fourth on the grid, charged to the front of the pack to battle with Lucas. The two were separated by slightly more than 2 seconds at the finish, as Martin went on to become the PROCAR 1993 Sportsman Challenge World Champion and was awarded a \$500 gift certificate.

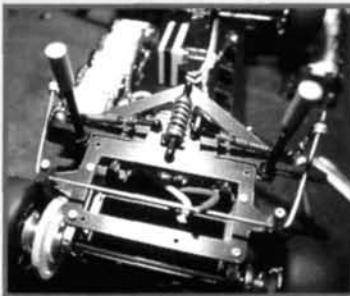
CRUISIN' FOR CURRENCY



procars World Championship

by John Howell

LEFT-SIDE DRIVE JIVE



To win the Pro A-Main in the PROCAR World Series, Joel Johnson used a derivative of the Trinity EV10ss that was equipped with a left-side drive system. The car has a real wide-base rear swaybar and a redesigned rear pod that places the motor on the car's left side instead of its right; the batteries have been placed closer to the front.

Trinity's Jim Dieter had designed and tested the car earlier in the year, and he

found that it got the power to the ground much more easily than the conventional setup did. As a superspeedway car gathers speed, more

G-force is placed on it, and both inside tires want to lift. Usually, when these cars transfer weight, they unload from the left side to the right owing to the superspeedway's banked oval; so, according to Dieter, it makes sense to weight the left side more. Its advantages? Well, Johnson finds that with the new setup, the car has more bite coming out of the corners. With more bite, you can get on the throttle out of the corners much sooner on slick tracks.

Trinity now offers a World Champion left-side-drive conversion kit for the EV10ss (EV0014). It comes with an axle, a left-side-drive hub and an upper and lower pod plate. Or you can buy their new complete car kit, the World Champion Limited Edition Speedway kit (EV0013, \$399.99), which comes with a reverse-rotation Slot Machine 2 stock motor.

The Formula America Class featured a very hot A-Main. TQ Rob Cutman blazed off the line and never looked back. The only person he had to contend with was seventh-place qualifier Brian Booze. Booze worked his way through the pack to give Cutman a fight for the lead, while John Themelis, in third, waited for a chance to take advantage of any mistakes that the leaders might make. Cutman and Booze battled to the end, but Cutman crossed the finish line first, with Booze trailing by .22 second! Cutman became the PROCAR 1993 Formula America World Champion and was awarded \$2,000.

In the Pro Class, TQ Jim Dieter jumped off the line and blasted away from the pack with Ralph Burch, Tony Neisinger and Chris Doseck behind him. Dieter—who had smoked the track during qualifying, setting a new track record—found himself ahead of teammate Joel Johnson, who was now sitting mid-pack. Halfway through the race, though, it looked as if Johnson had got his second wind, and he began rapidly passing the field in pursuit of the leader. First to go was Neisinger, then Burch, and then he set his sights on leader Dieter. Johnson was on a mission at this point, and he sneaked past Dieter to grab the lead and never looked back. Burch, while not right on the tail of that pair, couldn't be counted out at this point. After a few more laps, a hard-charging Burch pulled up on

Dieter and was all over his rear bumper. He would be denied, though, as Johnson crossed the finish line first, with Dieter holding on to second and Burch rounding out the top three. Johnson took home \$5,000 and the World Championship title; Dieter received \$1,500 for his efforts, and Burch \$750. ■

As soon as Joel had walked off the drivers' stand after winning \$5,000, I pulled him aside to talk about the race and about how it felt to win that much cash.

• **The race.** "I struggled in the beginning.... It was a really slippery track, and I found myself struggling with my regular car, so I switched over to the all-new left-side-drive car. When I did that, I found myself scrambling to catch up with motor selection and setup, so we gambled a lot with some of the setups I ran. Luckily, we figured it out in time, and I qualified in the top three. In every race I've been in this year, I managed to be in the top three, so I really wanted to be consistent [laughs].

"The track was really cold before and during the main, so I gambled again and decided to loosen up the car a bit so I could get some more steering. Luckily for me, it worked out well.

"Once the main was under way, the car pushed a little, so I let some people pass me until I felt my tires heat up; then I could start getting back on the throttle. At the 2-minute mark, I started com-



I'm Going to Disneyland

ing up on people really fast. I think that everyone went out too fast in the beginning, and their batteries went a little flat, so I started passing people—Neisinger, Burch, then eventually, Dieter. The rest is history."

• **The cash.** "As for the money, let's say that it really helped out with Christmas and my taxes!" laughed Joel. "Seriously, though, it's a nice reward for a week's worth of racing. You stay at the track for 12 to 15 hours a day; then you go back to your hotel room and work on your car for a few more hours.... It's nice for the racers to get something back for all their efforts."

PRO SERIES A-MAIN

| Fin. Qual. | Name | Chassis | Motor | Battery | ESC | Radio | Body | Tires |
|------------|-----------------|------------|-------------|-------------------|-------|------------|-------------------|-------|
| 1 | Joel Johnson | EV10ss | Trinity | Sanyo/Trinity | Novak | Airtronics | Bolink Pontiac | TRC |
| 2 | Jim Dieter | EV10ss | Trinity | Sanyo/Trinity | Novak | Airtronics | Bolink Pontiac | TRC |
| 3 | Ralph Burch Jr. | Hyperdrive | CAM | Sanyo/PTI | Tekin | Futaba | Protoform Pontiac | TRC |
| 4 | Gary Warren | Hyperdrive | CAM | Sanyo/PTI | Tekin | Futaba | Protoform Pontiac | TRC |
| 5 | Chris Doseck | EV10ss | CAM | Sanyo/CAM | Tekin | KO Propo | Protoform Pontiac | TRC |
| 6 | Tony Neisinger | EV10ss | Point Blank | Sanyo/Point Blank | Tekin | Airtronics | Bolink Pontiac | TRC |
| 7 | David Timmerman | Assoc. 10L | Epic | Sanyo | Novak | KO Propo | Bolink T-Bird | TRC |
| 8 | Craig Carey | Hyperdrive | CAM | Sanyo/PTI | Tekin | Futaba | Protoform Pontiac | TRC |
| 9 | Mike Boylan | EV10ss | Trinity | Sanyo/Trinity | Novak | Futaba | Protoform Pontiac | TRC |
| 10 | Ernie Bucci | EV10ss | Trinity | Sanyo/Trinity | Novak | Futaba | Bolink Pontiac | TRC |

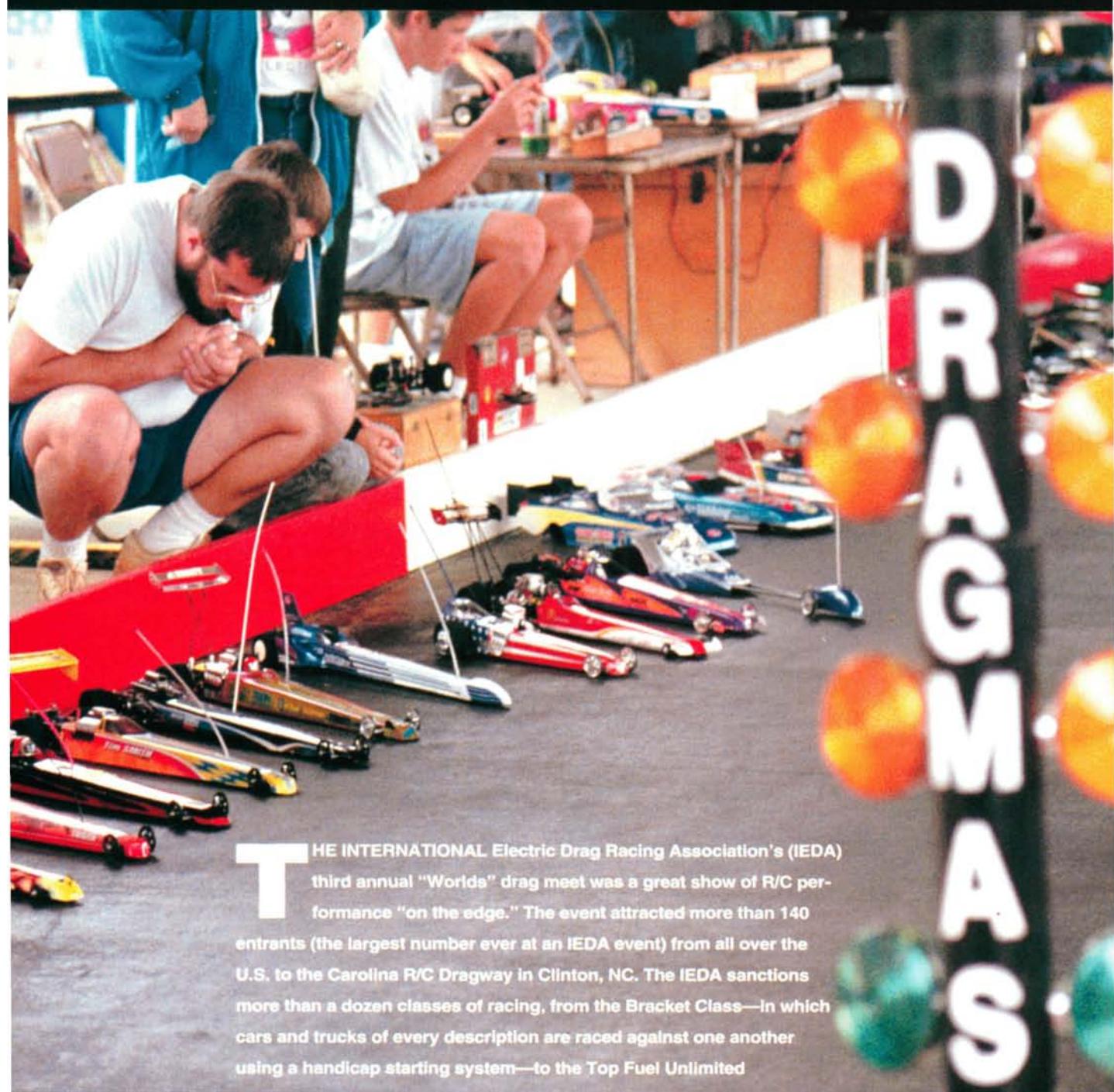
*Indicates new track record set

FORMULA AMERICA A-MAIN

| Fin. Qual. | Name | Chassis | Motor | Battery | ESC | Radio | Body | Tires |
|------------|----------------|-------------|-------|---------|-------|------------|-------------------|-------|
| 1 | Rob Cutman | Assoc. 10L | Epic | Sanyo | Novak | Futaba | Bolink T-Bird | TRC |
| 2 | Brian Booze | C.E.B. | Epic | Sanyo | Tekin | Futaba | Bolink Pontiac | TRC |
| 3 | John Themelis | Assoc. 10L | Epic | Sanyo | Tekin | Airtronics | Bolink T-Bird | TRC |
| 4 | Tony LaVoie | Assoc. 10L | CAM | Sanyo | Tekin | Futaba | Bolink Pontiac | TRC |
| 5 | David Davis | Assoc. 10L | Epic | Sanyo | Tekin | Futaba | Bolink Pontiac | TRC |
| 6 | Jason Alderman | Assoc. 10L | Epic | Sanyo | Novak | Futaba | Protoform Pontiac | TRC |
| 7 | Kirby Hand | Comp. Craft | Epic | Sanyo | Novak | Futaba | Bolink T-Bird | TRC |
| 8 | Troy Desmaris | Assoc. 10L | Epic | Sanyo | Tekin | Futaba | Protoform Pontiac | TRC |
| 9 | Jason Houser | C.E.B. | Epic | Sanyo | Tekin | Futaba | Bolink T-Bird | TRC |
| 10 | Jeff Irish | Comp. Craft | Epic | Sanyo | Novak | KO Propo | Protoform Pontiac | TRC |

SPORTSMAN CHALLENGE A-MAIN

| Fin. Qual. | Name | Chassis | Motor | Battery | ESC | Radio | Body | Tires |
|------------|------------------|-------------|--------|---------------|-------|----------|-------------------|-------|
| 1 | Craig Martin | Assoc. 10L | PROCAR | Sanyo | Novak | Futaba | Bolink Pontiac | TRC |
| 2 | Art Lucas | Assoc. 10L | PROCAR | Sanyo | Tekin | Futaba | Bolink Lumina | TRC |
| 3 | Richard Bostic | Assoc. 10L | PROCAR | Sanyo | Tekin | Futaba | Protoform T-Bird | TRC |
| 4 | Harold Bostic | Assoc. 10L | PROCAR | Sanyo/CAM | Tekin | Futaba | Protoform T-Bird | TRC |
| 5 | Chris Harrington | EV10ss | PROCAR | Sanyo/Trinity | Tekin | Futaba | Bolink Pontiac | TRC |
| 6 | Phil Cooper | Comp. Craft | PROCAR | Sanyo/Trinity | Novak | Futaba | PSE Pontiac | TRC |
| 7 | Aaron Brown | Assoc. 10L | PROCAR | Sanyo/PTI | Tekin | Futaba | Bolink Pontiac | TRC |
| 8 | Howard Baird | Assoc. 10L | PROCAR | Sanyo | Tekin | Futaba | Bolink Pontiac | TRC |
| 9 | Tony Baldwin | Assoc. 10L | PROCAR | Sanyo | Tekin | Futaba | PSE Lumina | TRC |
| 10 | Jamie Tennes | EV10ss | PROCAR | Sanyo | Novak | KO Propo | Protoform Pontiac | TRC |



DRAGMAS

THE INTERNATIONAL Electric Drag Racing Association's (IEDA) third annual "Worlds" drag meet was a great show of R/C performance "on the edge." The event attracted more than 140 entrants (the largest number ever at an IEDA event) from all over the U.S. to the Carolina R/C Dragway in Clinton, NC. The IEDA sanctions more than a dozen classes of racing, from the Bracket Class—in which cars and trucks of every description are raced against one another using a handicap starting system—to the Top Fuel Unlimited

IEDA Worlds

by M.R. Ogle

ANYTHING BUT A DRAG!

Top Qualifiers

| CLASS | TQ'ER | TIME (min.) | SPEED (mph) |
|------------------|------------------------------------|----------------|----------------|
| Bracket | Sean LeMaster (Naples, FL) | 2.473 | 54.98 |
| Super Street | Brandon Kulawik (Taylorsville, NC) | 4.013 | 28.64 |
| Comp. Eliminator | David Pearce (Elkton, MD) | 2.764 | 43.70 |
| Super Stock | Kim Kulawik (Taylorsville, NC) | 3.310 | 35.32 |
| Econo Rail | Kim Kulawik (Taylorsville, NC) | 2.875 | 39.87 |
| Pro Truck | Tom Vasi (Franklin Lakes, NJ) | 2.207 | 57.78 |
| Pro Stock | Terence Holt (Herndon, VA) | 2.021 | 59.28 |
| Super Gas | Kenny Vasquez (Woodhaven, NY) | 2.405 | 54.98 |
| Pro Mod | Nelson Llorrens (Brooklyn, NY) | 2.032 | 67.50 |
| Super Truck | Tom Vasi (Franklin Lakes, NJ) | 2.187 | 56.81 |
| Alcohol Funny | Jamie Colon (Otisville, NY) | 2.105 | 55.43 |
| Alcohol Rail | Terence Holt (Herndon, VA) | 1.964 | 62.55 |
| T/F Funny Car | Kent Vahlsing (Ramsey, MN) | 1.835 | 71.02 |
| T/F Dragster | Miguel Valentin (Rio Grande, PR) | 1.900 | 68.18 |

Overall Class Winners

Bracket—Tom Vasi
Super Street—Brandon Kulawik
Comp. Eliminator—Michael Day
Super Stock—Kim Kulawik
Econo Rail—Steve Knight
Pro Truck—Bob Smith
Pro Stock—Lenny Valentin
Super Gas—Kenneth Dailey

Pro Mod—Tony Young
Super Truck—Harold Thompson
Alcohol Funny—Scott Johnson
Alcohol Rail—Terence Holt
T/F Funny Car—Kent Vahlsing
T/F Dragster—Phil Salma
T/F Unlimited—Kimberly Frank

Dragsters Class (20-cell)—in which vehicles cover the 132-foot scale quarter-mile in less than 1.8 seconds and hit speeds of more than 80mph. If you have an R/C car—any R/C car—there's a class to drag-race it in.

The IEDA Worlds was a three-day event. Friday was a practice day, Saturday was qualifying, and Sunday was set aside for eliminations.

When it was time to hand out the

trophies, track owner Corbett Marshburn acted as master of ceremonies and thanked everyone for their patience through a long rain delay. He made everyone—even those who didn't win—feel as if they were part of a special event—a "happening." It was a great ending to one of the most outstanding events of the 1993 IEDA drag-racing season. Thanks, Corbett. We'll see you next year. ■

GOIN' FAST AND LOOKIN' PRETTY

LOWEST ET—Kent Vahlsing set the lowest ET of the meet with a 1.810 while running in the T/F Unlimited class. Vahlsing is sponsored by Astro/Houge.

TOP SPEED—Crankin' out the top speed of the meet was Tim Smith with a blistering 79.28 run.

Smith, running in the T/F Unlimited class, is sponsored by Twister/Lockmann.

CONCOURS WINNERS

Sponsored by Protoform, this featured three winners: Mike Ogle of Costa Mesa, CA, won in Dragster; James Macquarie of Naples, FL, won in Funny Car; and Jack Wright of King, NC, took first in the Doorslammer class.



MOTOR MADNESS



The motors used in R/C drag racing range from conventional stock motors—such as those used in ROAR and NORRCA competition—to the large samarium-cobalt Graupner and AstroFlight motors usually used for scale boats and airplanes. Lately, a few well-known R/C motor manufacturers have gotten into the drag scene with specially designed drag motors.

Trinity/Point Blank's "Rare Earth" drag motors have been used with much success by their team drivers and have shown tremendous potential—even setting a few records. Twister Motors offers a 10-turn, triple-wind drag motor with special magnets, and it has turned in some outstanding performances in several classes—from 8-cell Pro Stock to 20-cell Unlimited.

Fine Design's cordite motor is based on a conventional Yokomo can but features a cut-down armature and special compound magnets. Fine's Terence Holt, Phil Salma and Kim Frank have used this motor to set several national records. For their consistent, torque-heavy performance, however, AstroFlight motors are still the favorites of many racers in classes from 10-cell up. These seven-pole-armature motors have extra-thick commutators and oversize brushes that easily handle the juice from 20-cell packs, without having to be trued very often.

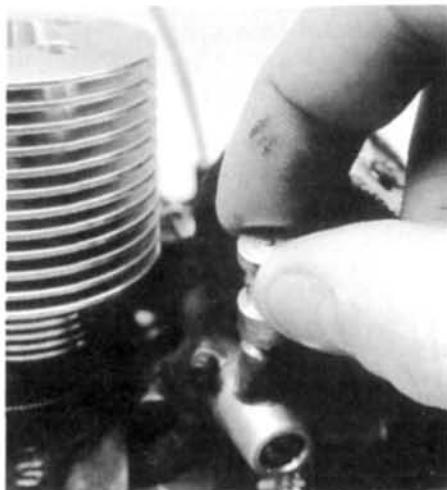
R/C drag racing is a real test of a motor's true horsepower potential, monitored to a 1,000th of a second. And, because we've found that there are obviously big performance gains to be had by using cobalt or other Rare Earth magnets in R/C motors, could it be that other forms of R/C racing will eventually follow suit?

Basic Engine Tuning

Tune to zoom!

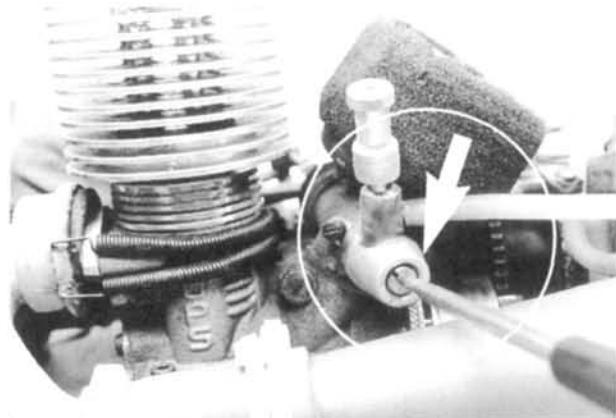
by JOHN HUBER

ALTHOUGH engine tuning is very easy, not many people have tried it. Basically, tuning means setting the fuel-to-air mixture on the carburetor. But with two needles to set, it's easy for the engine to get out of whack. I talked with John Adams of Horizon Hobby Distributors to get some tips on how to get it right.

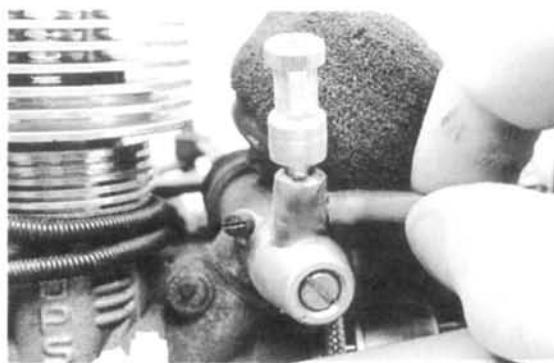


3 Setting the high-end needle is a little easier. Start with the needle at three turns out. Run the car around for a couple of minutes at full speed, and see how the engine reacts. If it's too rich, it will be very smoky and blubbery, and it won't want to get up and go. A lean engine will sound hollow with a sound almost like sucking. Try leaning it by turning the needle one eighth of a turn clockwise. Keep doing this until the engine runs smoothly and fast at full speed.

2 John has a very easy way to test your settings. Start your engine, and bring it up to temperature by letting it run for a minute or so. Rev the engine a couple of times to clean it out, and let it settle for about 10 seconds. Pinch off the fuel line as close to the carb nipple as possible. If your low end is too lean (not enough fuel), the engine will shut off almost instantly. If it's rich (a lot of fuel), it will do nothing for about 5 seconds; then it will rev up. After that, it will rev even higher and die. Try to keep the setting on the rich side, and tune it so that you get a good response when you punch the throttle from a dead stop.



1 The low-end needle controls the fuel/air mixture at idle and at low speeds. Its setting determines how the engine idles and how it makes the transition to a higher speed. The low-end needle is usually set at the factory, and only a slight adjustment is needed to get it right.



4 Monitor the engine temperature periodically to make sure that it doesn't get too hot. The most accurate (though most expensive) method of checking the temperature is with an infrared temperature probe.

ENGINE TROUBLESHOOTING

IF YOUR ENGINE ...

RUNS ERRATICALLY, OR HOT

Fuel foaming
Bad plug gasket
Fuel line too small
Leaking glow-plug stem
Glow plug shorted
Blocked fuel vent
Glow plug blown
Pick-up off in tank
Bad fuel
Crack in crankcase
Air leak in tank
Varnish in engine
Air leak in line
Bearings worn out
Kinked fuel line
Bearings defective
Debris in fuel line
Split tubing inside tank
Carb leaking air
Carb set too lean
Debris in filter
Loose case screws
Clogged needle valve
Loose plug
Loose head

RUNS LEAN, WILL NOT RICHEN

Fuel vent blocked
Improper lubricant
Defective plug
Improper carb setting
Fuel line too small
Fuel line clogged
Air leak in tank
Air leak in line
Air leak in carb
Head screws loose
Loose case screws

WON'T START

No fuel
Flooded
Dead battery
Defective plug
Bad fuel
Defective leads
Loose plug
Loose head
Improper connection
Wrong carb setting

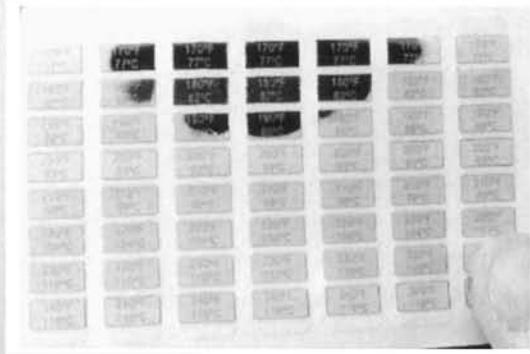
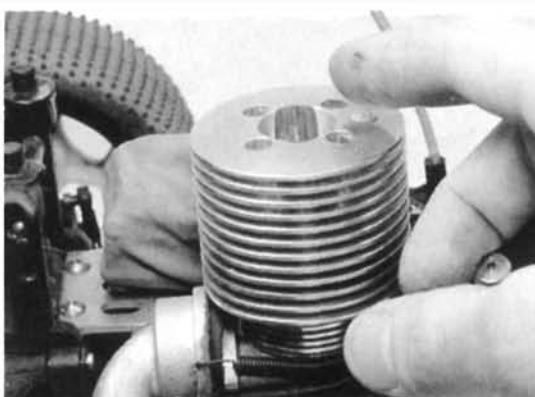
RUNS A SHORT TIME AND QUILTS

Pick-up off in tank
Bad plug
Bad fuel
Loose carb
Wrong carb setting
Case screws loose
Head screws loose
Loose plug
Fuel line too large
Leak at carb base

WON'T IDLE

Bad plug
Bad fuel
Loose carb
Wrong carb setting
Case screws loose
Head screws loose
Loose plug
Fuel line too large
Blocked vent

5 A drop of saliva on the head also indicates how hot the engine is. If the saliva crackles, pops and evaporates quickly, it's too hot. If it takes a while to evaporate, you're safe.



6 A new item—"Temp Tape" from Trick Products*—also tells you the temp. Simply affix the tape to the head and run the engine. The different temp squares will darken to display the temperature.

*Here's the address of the company mentioned in this article:

Trick Products, P.O. Box 161,
Grand Blanc, MI 48439; (313) 694-3058

TRINITY

Technology marches on!

'EX'-TECH IS HERE

Ever heard someone say "This motor is 2 years old and it still runs great"? Well, maybe so, but what's more likely is that the person has gotten used to the motor as it has deteriorated over the years. Give that someone a fresh motor or rebuild that one and they will see the difference. There are cases where the old motor may be preferred. This is often the case if the new motor was not right for the application or was not correctly geared. When I say not the right motor, what I mean is this: the old motor may have been a 15-turn double. The person buys a new 15-turn double and wow!—it doesn't run the same! Why?

CHANGING TECHNOLOGY

There is no more rapidly changing aspect of R/C racing than motor development (although cars are close behind). As motor components improve (magnets in particular), characteristics change. If you want the power curve of a motor from 2 to 3 years ago, it might require a motor with 1 or 2 turns less using today's technology and if you get a motor with the same turns, it will probably require a different gear because it will generate less rpm. Note that I am referring to modified motors; stock motors are another story altogether.

The reason that these effects take place is far too involved to get into in this column, but they happen. This is why Trinity's new EX-TECH motor line is offering a 7-turn motor—the EX-0107. It's not that we are trying to sell the lowest turn/highest rpm motor on the market, but rather that we are striving to retain the same overall power range in our motors—from our previous 'Championship' series to our new 'EX'-TECH' line of high-performance motors.

WHEN TECHNOLOGY MARCHES ON, USE IT!
THE TRINITY 'EX'-TECH MOTOR LINE

A THOUGHT...It may be time for a new standard to compare motors with—something besides turns! Think about it!!

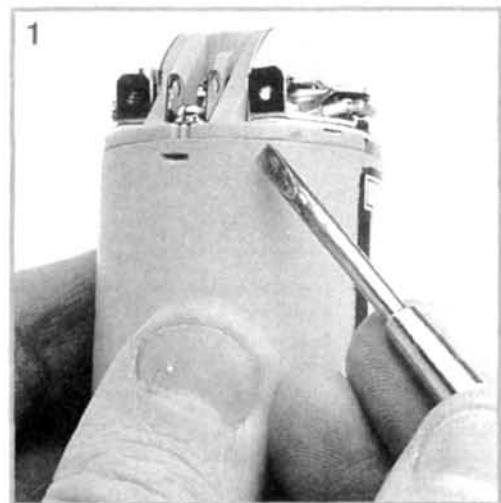
Until next month,
Neal McCurdy
Trinity Team Manager

ADVERTISEMENT

by Frank Masi

Installing a New Armature

Mod Motor Rejuvenation



Before taking the motor apart, scribe the can and the endbell using a small screwdriver so that you can remember the proper can/endbell orientation when you reassemble the motor. Use this scribe mark as a reference for setting the motor's timing, too.



IT'S A KNOWN fact that modified motors last longer than stock motors. This is because modified motors can be rebuilt to like-new condition time and time again, but stock motors can't be taken apart and still be considered legal for sanctioned competition. When a motor is rebuilt, its commutator is re-trued on a lathe; this removes the burned areas that are caused by the motor brushes and that can rob your motor of power. Unfortunately, a commutator can be cut only so many times before its diameter becomes too small. At that point, you're faced with the choice between buying a new motor or installing a new armature—definitely, the less expensive route!

WHICH ARMATURE IS RIGHT?

If you choose to install a new armature, first determine whether you want to stick with the motor's current wind or switch to an armature with more or fewer turns of wire. If your motor is fairly new (less than one year old), you can use almost any armature, as long as it's designed to work with your particular can-and-endbell combination. If, however, your motor is older, try an armature with the same, if not a higher, number of turns because the magnets in your motor will have weakened with use.

Install your new armature in the can, then attach the endbell. For the best performance, it's important to center the armature in the can's magnetic field, so don't install any armature shims yet!

With the motor assembled, hold the can horizontally, and spin the armature shaft. When the shaft stops, gently grab it and pull it. The distance the shaft moves is the same as the thickness of the shims that you'll need to place between the armature and the can's ball bearing.





Remove the armature, and place the appropriate shims on the shaft. Re-install the armature in the can/endbell assembly, and spin the shaft again to double-check its alignment. There should be a very small amount of play in the shaft; you'll know whether the

shims are too thick if the shaft doesn't move when you pull it. If it isn't right, repeat these steps until proper alignment is achieved.



It may also be necessary to shim the top of the armature, between the shaft and the endbell's bearing. As before, assemble the motor, hold the can horizontally, and spin the armature by its shaft. Now, instead of pulling on the shaft to check for play, push the shaft into the motor. A very small amount of play is all right, but if the shaft exhibits slop, shim its top in the same way as you shimmed the bottom.

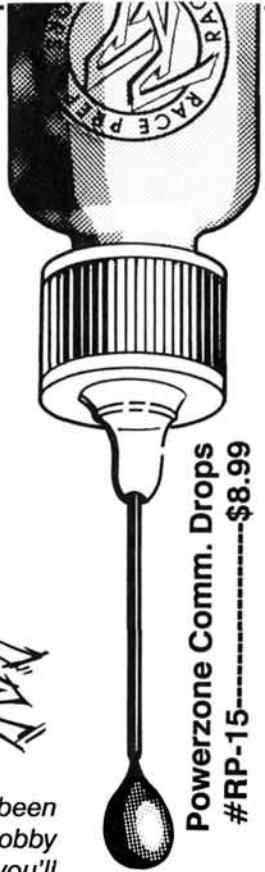
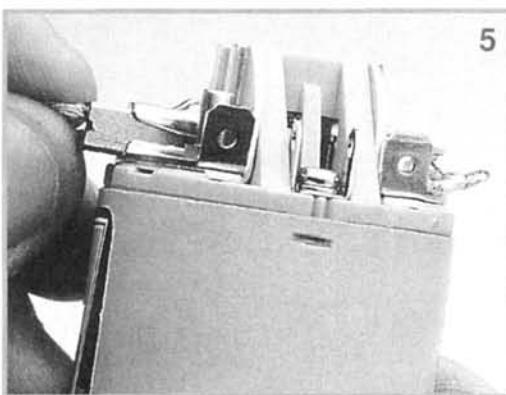
If shimmed correctly, the armature will spin freely and easily inside the motor can and endbell. Here are some important points to think about when performing this procedure:

- The goal is to center the armature in the can's magnetic field—not to wedge it between the two motor bearings. Always allow a small amount of end play.

- Don't over-shim one side of the armature; this is an easy mistake to make. Doing so will push the armature past the magnet's field, and this will cause unwanted friction between the armature and the bearings and will slow your motor.

Now that you've got a spankin' new armature, install new brushes, and run your motor (in the proper direction for your application) at 3 to 5 volts for a few minutes. This will seat the brushes to the commutator for better conductivity and motor efficiency.

Installing a new armature in your old, worn-out modified motor will give you like-new performance for far less than the price of a new motor. ■



If you've been around this hobby for any time, you'll know that the Race Prep Silver "R" Compound Motor Brush is the best. Now you can make it better with the new Powerzone Comm. Drops. One dropper run is all it takes to increase power up to 20%. No other comm. drop last like ours - over six minutes! Will not glaze the commutator and eliminates carbon deposits. The motor runs cooler, more efficient, more RPM, more torque, which equals more power! One bottle lasts for over 1000 runs. Who wouldn't pay under a penny per run for this kind of performance? The Powerzone Comm. Drops work great on any motor or brush. Why pay more when you can get the best for less?



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OFNA HODR

(Continued from page 48)

CHASSIS ASSEMBLY

I was put off by the HODR's flat aluminum chassis. Sure, its 6061 aluminum 3.2mm chassis is stout, but it has no raised edges to stiffen it; this made me wary of excessive chassis flexing.

When I was assembling the servo saver and steering arms, I thought the manual was confusing. The servo-saver shafts have three grooves for E-clips. Position them so that the center groove is closest to the top of the shaft, and put an E-clip in the bottom groove. Slide on the spring and the servo-saver arm, then press the assembly down until the middle groove is exposed. Install the E-clip in the middle groove to secure the assembly.

I used an O.S.* .21 RF-B engine; the instructions tell you not to use the aluminum spacer when using this engine because you'll have a header clearance problem. The trouble is, without some sort of spacer, the clutch nut bottoms out on the engine shaft before the flywheel is tight. To solve this dilemma, I bought a washer at the auto parts store.

I also cut a ball-point pen spring in half to make retainer springs for the air-filter cage. The springs prevent the cage from

coming apart and keep dirt out of your engine.

READY FOR THE RADIO

For radio gear, I chose the inexpensive Futaba* 2PBKA Magnum Jr. radio with R112JE receiver, one 9301 servo (for steering) and one S148 servo (for throttle/brake). A Sanyo 6.0V, 650mA stick pack would provide plenty of power, and it could be strapped to the radio plate without a problem.

FINISHING TOUCHES

The manual tells you to trim the body first and then paint it. This can lead to overspray on the outside of the body; so paint it first, then carefully trim it with scissors. I cut holes for the cylinder head and the fuel tank. I also opted for the OFNA molded nylon wing, which is much tougher than a Lexan wing.

With everything in place and the HODR 4WD Super Buggy on hard, level ground, I set the front ride height at 45mm and the rear at 50mm, using the setscrews in each suspension arm.

ENOUGH ALREADY! IS IT FUN?

From the first lap, I was stoked about the HODR's handling! The shocks are excel-

(Continued on page 122)

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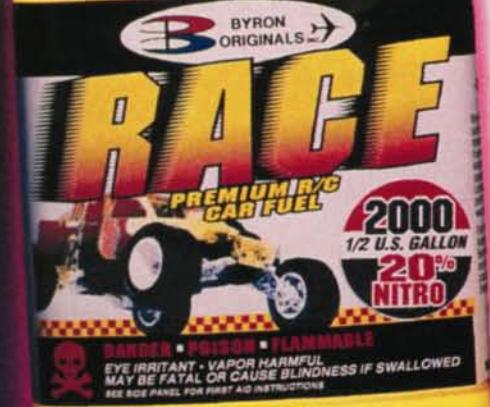
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CJ's Hobbies, 3761 Government Blvd., Mobile, AL 36693; CJ., (205) 666-0016



Dixie R/C Speedway, Rt. 10, Box 210, Gadsden, AL 35901; Craig Reynolds, (205) 442-1059



Fleming's R/C Raceway, 169 Raceway Dr., Wellington, AL 36279; Phil Fleming, (205) 820-6269



Oak Mountain Raceway & R/C Club, 2624 Janice Circle, Birmingham, AL 35235; Will Barrett, (205) 856-7051



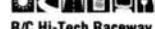
Performance R/C Hobby, 2600 A Belting Rd., Decatur, AL 35603; Ray & Debra Steen, (205) 353-3399



Phenix Raceway, 2006 Opelika Rd., Phenix City, AL 36867; Casey Hoover, (205) 297-0040



Piedmont R/C Superspeedway, 41 Jewell Lane, Oxford, AL 36203; Terry Young or Greg Gaines, (205) 831-2986 or 831-1666



R/C Hi-Tech Raceway, 3303 Meridian St., Huntsville, AL 35811; Rick Chambers, (205) 539-1347



Satellite Hobbies, 2799 Rose Rd., Albertville, AL 35950; Troy or Jerry Smith, (205) 878-2526

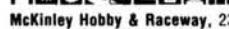


Spring Cove Speedway, Rt. 1, Box 95, Florence, AL 35630; Chuck or Lyda Sypolt, (205) 757-5998

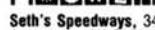


ALASKA

ARCORR, 2812 Spender Rd., Anchorage, AK 99503; Jim Raffuse, (907) 277-7778



McKinley Hobby & Raceway, 2300 McKinley Dr., Wasilla, AK 99654; (907) 376-9351



Seth's Speedways, 3400 Hiland Dr., Anchorage, AK 99504; Seth Graham, (907) 337-3777



Southtown Hobby & Raceway, 12001 Industry Way #2, Anchorage, AK 99515; Bob or Vickie Peters, (907) 345-3131



Stamp Hobby & Track, 13651 Jarui, Anchorage, AK 99504; Don Stump, (907) 345-8476



ARIZONA

Economy One-Stop Raceway, 4000 S. 4 Ave., Yuma, AZ 85366; (602) 344-3514



Finish Line Raceway, 7025 E. 21st St., Tucson, AZ 85710; Jerry Kikkert, (602) 747-3633



Frank's Hobby House, 19401 N. Cave Creek Rd., Phoenix, AZ 85024; Marty, (602) 992-3495



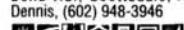
G&S Raceway, 967 Hancock, Bullhead City, AZ 86442; Bob Olsen, (602) 758-1100



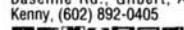
Havasu R/C Raceway, 1081 Desert View Dr., Lake Havasu City, AZ 86403; Bernie Coates, (602) 680-6304



HobbyTown Raceway, 9180 E. Indian Bend Rd., Scottsdale, AZ 85250; Dennis, (602) 948-3946



HobbyTown Raceway, 1915 East Baseline Rd., Gilbert, AZ 95234; Kenny, (602) 892-0405



HobbyTown Speedway, 2814 W. Bell Rd., Phoenix, AZ 85023; Mike Kaminski, (602) 993-0122



Outlaw Speedway, 5309 Lakewood Rd., Ft. Mohave, AZ 86427; Frank Greely, (602) 768-5001



Parker 4-H R/C Raceway, P.O. Box 5342, Parker, AZ 85344; Bill Silvers, (602) 667-42461



R/C Raceplex, 5222 W. Glendale Ave., Glendale, AZ 85301; Bill Murray, (602) 934-5567



R/C Sports Mania, 3550 N. 35th Ave., Phoenix, AZ 85017; Brian Dick, (602) 278-3671



Race Prep Raceway, 852 S. Hwy. 89, Chino Valley, AZ 86323; Mike Dunn, (602) 636-1955



Scale Racing Sports, 1120 N. Hayden Rd., Tempe, AZ 85281; Mike, (602) 829-9117



Sierra Vista Raceway, 105 N. Central Ave., Sierra Vista, AZ 85635; Wayne Tuthill Sr., (602) 459-1335



Speedway Hobbies, 1000 N. Humphreys St., #204, Flagstaff, AZ 86001; Gary McAllister, (602) 556-0710



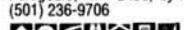
Winslow Raceway, 813 E. 3rd St., Winslow, AZ 86047; Shawn Wilkie, (602) 289-2192



Arkansas Int'l. Superspeedway, P.O. Box 1636, Pine Bluff, AR 71613; Joe Pitts, (501) 247-2371



DCA Racing, 412 Hiway & 14th St., Paragould, AR 72450; Lyle Spillman, (501) 236-9706



The Finest R/C Off-Road Circuit, 8711 Elder Creek Rd., Sacramento, CA 95820; Jason, (916) 381-6555

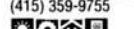


Performance Hobbies, 2222 Spence, Jonesboro, AR 72401; (Rick Winingham, (501) 935-6501

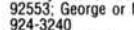


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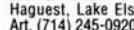
AppleTree Raceway, 1303 Hermosa Ave., Pacifica, CA 94044; Sonny Day, (415) 359-9755



ARO Hobbies Raceway, 24275 Sunnymead, Moreno Valley, CA 92553; George or Mike Kileen, (714) 924-3240



Art & Dean Raceway, 29409 Hague, Lake Elsinore, CA 92530; Art, (714) 245-0920



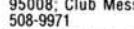
Bob & Jim's R/C World, 3485 University Ave., Riverside, CA 92501; Bob Parcell, (714) 684-6314



Brake-A-Way Raceway, 3179 Hamner Ave., Norco, CA 91760; Debbie Burrie, (714) 736-6063



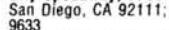
California Auto Racers (CAR), 96 San Tomas Aquino Rd., Campbell, CA 95008; Club Message Line, (415) 508-9971



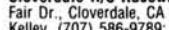
Cats West Raceway, 5631 Old Lonetree Way, Antioch, CA 94509; Jerry Winkelbauer, (510) 779-0505



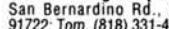
City Speedway, 7750 Convoy Ct., San Diego, CA 92111; (619) 560-9633



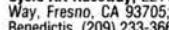
Cloverdale R/C Raceway, 1 Citrus Fair Dr., Cloverdale, CA 95425; Tom Kelley, (707) 586-9789; track, (707) 894-4468



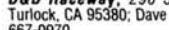
Covina Racing Company, 1611 W. San Bernardino Rd., Covina, CA 91722; Tom, (818) 331-4984



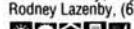
Cycle Art Raceway, 2211 N. Pleasant Way, Fresno, CA 93705; Richard De Benedictis, (209) 233-3665



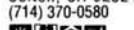
D&D Raceway, 290 S. First St., Turlock, CA 95380; Dave Miller, (209) 667-0970



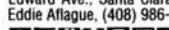
Desert R/C Raceway, 9231 E. Hobson Way, Blythe, CA 92225; Gordon Lazebny, (619) 922-5516



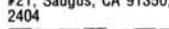
Drag City, 1361 W. Valley Blvd., Colton, CA 92324; Chris Gabriel, (714) 370-0580



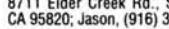
Fast Eddie's R/C Raceway, 3261 Edward Ave., Santa Clara, CA 95054; Eddie Atflague, (408) 986-8256



Fast Lane, 25845 San Fernando Rd., #21, Saugus, CA 91350; (805) 255-2404



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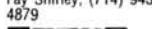
Outlaw R/C Hobbies, 7920 Webster, Highland, CA 92346; Rick James, (909) 864-1770



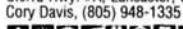
Pegasus Raceway, 14643 Hawthorne Ave., Fontana, CA 92336; Ern Dog, Bob Cat, (909) 822-0226



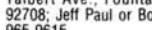
Perris Recreation R/C Track, 120 N. Perris Blvd., Perris, CA 92370; Len or Fay Shirley, (714) 943-6603 or 657-4879



Pole Position Speedway, 43719 Sierra Hwy. #A, Lancaster, CA 93535; Cory Davis, (805) 948-1335



R/C Off-Road Raceway, 10810 Talbert Ave., Fountain Valley, CA 92708; Jeff Paul or Bob Fiege, (714) 965-9615



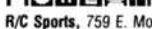
R/C Speedway and Hobbies, 1453 North Milpitas Blvd., Milpitas, CA 95035; Mike Melal, (408) 263-4228



R/C Racing Center and Hobbies, 9842 Channel Rd., Lakeside, CA 92040 (San Diego County); Russ or Cindy Escalera, (619) 443-2270



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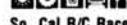
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San Diego R/C Car Club, P.O. Box 232456, San Diego, CA 92193; (619) 560-0089



Scott's Practice Track, 1131 Ramona Dr., Mt. Shasta, CA 96067; Scott Cleveland, (916) 926-1012



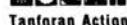
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Square Roundhouse R/C Speedway, 1468 Lander Ave., Turlock, CA 95380; (209) 668-4454



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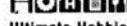
Tanforan Action Track, Tanforan Shopping Center, San Bruno, CA 94066; Jerry Imboden, (415) 583-2683



Team Air Racing Club, 18208 Imperial Hwy., Yorba Linda, CA 92686; Don or Nicky, (714) 579-7488



Tyler's RC/RO Racing Center, 6865 Flanders #D, San Diego, CA 92121; (619) 597-3072



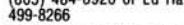
Ultimate Hobbies, 2143 N. Tustin Ave. #6, Orange, CA 92665; (714) 921-0424



Valley R/C Race Park, 146 S. Santa Fe St., Hemet, CA 92344; Valley Wide Recreation, (714) 654-1505 or 658-4322



Ventura Road Runners/Freedom Park Raceway, 520 Freedom Park, Camarillo, CA 93010; Les Abramson, (805) 484-8920 or Ed Haney, (805) 499-8266



Victory Speedway, 22960 Victory Blvd., Woodland Hills, CA 91367; Bob Sarnelle, (818) 888-9000



White Mountain R/C Raceway, 174 West Line, Bishop, CA 93514; (619) 872-1599



Zero'n'4 Hobbies, 3360 S. Fairway, Visalia, CA 93277; Eddie McKay, (209) 733-1840



COLORADO

Colorado R/C Speedway, 6520 Wadsworth Blvd. #130, Arvada, CO 80003; (303) 425-1718



J.P.'s Raceway, P.O. Box 933, Ignacio, CO 81137; Jim A. Paul, (303) 563-0025



MHOR R/C Raceway, 15540 E. Batavia Dr., Aurora, CO 80011; Jess Brockman, (303) 343-0151



Miracle R/C Speedway, 4206 Wadsworth Blvd., Wheatridge, CO 80034; Rob Grossman, (303) 420-3051



R/C Mini Sports, 6401 Broadway, Unit G, Denver, CO 80223; John Weins, (303) 426-0110



R/C World & Track, 2788 S. Federal Blvd., Denver, CO 80236; (303) 789-0838



Rocky Mountain R/C Raceway, 5737 Constitution Ave., Colorado Springs, CO 80915; Lee Seigel, (719) 550-1777



CONNECTICUT

Craftech R/C, NLLON SUBASE, Box 14 MWR, Groton, CT 06349; Steve Komaratz, (203) 449-4314



CT R/C Off-Roaders, behind Old Field School, Fairfield, CT 06430; Mike Belmonte, (203) 661-0145



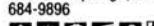
Hobby World Raceways, 161-6 Woodford Ave., Plainville, CT 06062; (203) 793-1111



JP's Hobbies & Track, 54 Wakelee St., Ext., Seymour, CT 06483; (800) 547-5772



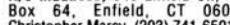
K/N R/C Speedway Inc., West St., Stafford Springs, CT 06076; (203) 684-9896



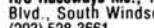
NERCAR, 36 Glendale Rd., Enfield, CT 06082; Phil Olsson, (203) 627-5410



R/C Madness, 640 Enfield St., P.O. Box 64, Enfield, CT 06082; Christopher Marcy, (203) 741-6501



R/C Raceways Inc., 1265 John Fitch Blvd., South Windsor, CT 06074; (203) 528-3661



R/C World/Sugar Hollow Speedway, 66 Sugar Hollow Rd., Danbury, CT 06810; (203) 748-2185



Wallingford Indoor Racing, 63 N. Cherry St., Wallingford, CT 06492; (203) 265-3939



DELAWARE

4E Hobbies, 1138 West Dupont Hwy., Millisboro, DE 19966; Peggy Evans, (302) 934-1708



Hobby Works Raceway, Hamlet Shopping Center, Dover, DE 19901; Steve or Gordon, (302) 674-9123



Mills Raceway, RD 2 Box 83D-8, Milford, DE 19963; Mike Roe, (302) 422-6766



T&C Raceway, Rt. 113 South, Georgetown, DE 19947; Sam Thompson Jr., (302) 856-3804



T.N.T. Hobbies & Raceway, 609 Stein Hwy., Seaford, DE 19973-0464; Thorpe Shatney, (302) 628-0520



FLORIDA

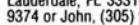
B+T R/C Central, 811 Playground Rd., Ft. Walton Beach, FL 32547; (904) 863-2666



Branford R/C Speedway, Rt. 3, Box 240, Branford, FL 32008; (904) 935-0758



Broward County R/C Race Club, 2201 NW 9th Ave., Mills Pond Park, Ft. Lauderdale, FL 33314; Ed, (305) 480-9374 or John, (305) 925-8284



Challenger Speedway at the Willows, Willows Park & Okeechobee Blvd., Royal Palm Beach, FL 33414; Walt, (407) 965-2790 or Mark, (407) 790-6917



Coral Springs Roadrunners, P.O. Box 9632, Coral Springs, FL 33075; Tom Allison, (305) 721-0344 or Rick Schwartz, (305) 344-1983



Doc's Indoor R/C Raceway, 16803 US 19N, Clearwater, FL 34624; Steve "Doc" Wacholz, (813) 824-7702



5-Hill-5 Raceway, 125 Second Terrace West, Winter Haven, FL 33880; Chuck Nolke, (813) 324-7406



First Coast International Speedway, P.O. Box 1342, Jacksonville, FL 32201-1342; Bob Thompson, (904) 743-2161



FYRE, 14160 Hwy. 441 (River Plaza), Tavares, FL 32728; Ray Salerno, (904) 357-1635



Gainesville R/C Speedway, 9311 SW 75 Way, Gainesville, FL 32608; Greg Rhodes, (904) 495-3600



Greater Orlando Auto Racers, 970 Keller Rd., Altamonte Springs, FL 32714; Dave Mottin, (407) 293-7090



H&H Raceway, 4121 S. Tamiami Tr., Sarasota, FL 34231; (813) 922-7711



Hialeah Hobby Raceway, 4562 W. 12 Ave., Hialeah, FL 33015; (305) 826-3702



Hobby Shop Speedway, 4805 Hwy. 22, Panama City, FL 32404; Larry Pollock, (904) 763-4599



JARCAR Raceway, 7273 103rd St., Jacksonville, FL; Ray or Greg, (904) 772-9022



Kenny's Track & Hobby, 11125 U.S. 41 South, Gibsonton, FL 33534; Kenny Ryals, (813) 671-9123



Lake Whippoorwill International Speedway, 12345 Narcoossee Rd., Orlando, FL 32827; Bob Hosch, (407) 277-9586; fax (407) 277-2568



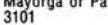
Louie Burton's R/C Raceway, 4215 Mustang Rd., Lakeland, FL 33803; Louie Burton, (813) 665-1322



M&M R/C Raceway, 16921 Waterline Rd., Bradenton, FL 34202; Mike Williams, (813) 747-2889



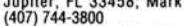
Miami R/C Speedway, 12546 N. Kendall Dr., Miami, FL 33186; Jeff Mayorga or Paul Butler, (305) 271-3101



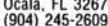
Miami Speedway, 7805 NW 148th St., Miami Lakes, FL 33014; Julio Romero, (305) 687-6728



My Rose, 1695 W. Indiantown Rd., Jupiter, FL 33458; Mark Watson, (407) 744-3800



Ocala R/C Car Club, P.O. Box 70166, Ocala, FL 32670; Larry E. Mitchell, (904) 245-2609; Steve Shook, (904) 694-5147



Oceanside Raceway, 206 E. Eau Gallie Blvd., Indian Harbour Beach, FL 32937; Michael Kelly, (407) 242-0434



Paul's R/C Track & Hobby, 4511 Dr. M.L. King Blvd., Suite 8, Tampa, FL 33614; Paul or Eula Surrette, (813) 872-8662



PBG R/C Motor Park, 6351 Barbara St., Palm Beach Gardens, FL 33410; Doug Gleason, (407) 743-9791



Performance Plus Raceway, 2820 SE 62 St., Ocala, FL 34841; Charlie Floyd or Cari Ross, (904) 867-5557



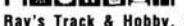
Pro Hobbies Speedway, 715 N. Lake Pleasant Rd., Apopka, FL 32712; (407) 886-4615



R/C Action, 646 Choy Lee Circle, Orlando, FL 32708; (407) 695-6746



Ray's Track & Hobby, 4605 W. Cayuga St., Tampa, FL 33614; (813) 872-8662



Rental Raceway, 3655 S. Hopkins Ave., Titusville, FL 32780; (407) 383-0631



River City R/C Car Club, 9711 Sharing Cross Dr., Jacksonville, FL 32257; Bill Fraden, (904) 268-1948



Southern Hobbies, 10 N. Magruder Ave., Orlando, FL 32805; Mike Spehn, (407) 521-7479



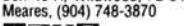
Southwest Florida R/C Raceway, 2425 Rivers Rd., Naples, FL 33964; Clyde Armstrong, (813) 455-1143



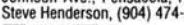
Sun Valley Speedway, Palmer Blvd., Sarasota, FL 34232; (813) 322-1200; (mailing address: Rt. 1, Box 443N, Myakka City, FL 34251)



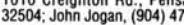
Three Flags R/C Racetrack, Rt. 2, Box 48-A, Wildwood, FL 34785; Don Meares, (904) 748-3870



Thunder Road R/C Club, 3303 E. Johnson Ave., Pensacola, FL 32514; Steve Henderson, (904) 474-4857



TJ's R/C Raceway & Hobby Shop, 1010 Creighton Rd., Pensacola, FL 32504; John Jogan, (904) 473-2330



Treasure Coast R/C Club, 4931 Oleander, Fort Pierce, FL 34982; Lou, (407) 464-3207



West Coast R/C Club, Lake Park, 17203 N. Dale Mazy, Tampa, FL 33549; Tim, (813) 932-3650; Bob, (813) 239-9630

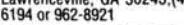


Wilbur Avenue Raceway, 1848 Wilbur Ave., Vero Beach, FL 32960; (407) 567-1200

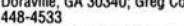


GEORGIA

A.R.C. Raceway, 350 Shyrewood Dr., Lawrenceville, GA 30243; (404) 962-6194 or 962-8921



ARCAR Raceway, 6894 Buford Hwy., Doraville, GA 30340; Greg Coan, (404) 448-4533



Carnesville R/C Speedway, Rt. 2, Box 2354, Carnesville, GA 30521; Bobby Maxwell or Byron Sartain, (404) 384-4587



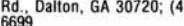
Case R/C Raceway, P.O. Box 1061, Trenton, GA 30720; (404) 657-6789



Chaffee Park Raceway, 1800 Pearl Ave., Augusta, GA 30904; Darren Brooks, (706) 738-8929



Dalton Raceway, 2300 Chattanooga Rd., Dalton, GA 30720; (404) 226-6699



Echelonne Superspeedway, 2149 Richardson Dr., Macon, GA 31206; Andy Thompson/Cliff Kline (912) 788-8731 or 788-2728



Georgia Hobby Center, 112 Kenwood Rd., Fayetteville, GA 30214; (404) 460-1753

Sandy Cross Speedway, Rt. 1, Box 1073, Royston, GA 30662; Morris Phillips or Wayne Fowler, (404) 245-9573



Silver Wings Raceway, 5611 Riverdale Rd., College Park, GA 30349; (404) 991-2225



Sugar Bowl R/C Speedway, 5272 North Ave., Sugar Hill, GA 30518; Shelley or Jan Bailey, (404) 945-6709



HAWAII

K/M's Hobbies, 2305 Jasmine St., Honolulu, HI 76816; George Mirkirana, (808) 757-7135

Koha RC Racing, 74-5563 Kawai St., Kailua-Kona, HI 96740; Hobby-Tronics, (808) 329-3072



R/C Motorsports Hawaii, 98-029 Hekaha St., Aiea, HI 96701; Lane Petrich, (808) 487-5155



Team PRC Racing Club, Pahoa Government Rd., Pahoa, HI 96778; Charlie Kawamoto, (808) 965-8216



IDAHO

Capital Dirt Burners, 1945 N. Teare Ave., Meridian, ID 83642; Jim Brandon, (208) 888-7079



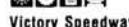
Dapco Hobbies, 2211 Garrett Way, Pocatello, ID 83201; Pat Talbert, (208) 233-8163



Falls Hobbies & R/C Raceway, 1515 Northgate Mile, Idaho Falls, ID 83401; (208) 529-8650



MARA, 1229 Burrell, Lewiston, ID 83501; Rich Law, (208) 743-4141



Victory Speedway, 5416 Anna St., Boise, ID 83705; Bruce Wallace, (208) 343-3113



ILLINOIS

Adam's Blast Track, RR 1, Box 370, Ashmore, IL 61912; John Deffenbaugh, (217) 349-8447



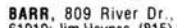
AJ's Raceway, Kesslinger Road, Dekalb, IL 60115; AJ. Schultz, (815) 756-2772



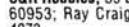
Ameri-Trac, R3, Box 242, Mattoon, IL 61938; (217) 234-8707



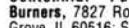
Badlands II, 320 W. Jackson St., Vandalia, IL 62471, (618) 283-2913



BARR, 809 River Dr., Byron, IL 61010; Jim Haynes, (815) 234-5615



C&R Hobbies, 39 E. Jones, Milford, IL 60953; Ray Craighead, (815) 889-4073



Centennial Park/LeMont Dirt Burners, 7827 Rohrer Dr., Downers Grove, IL 60516; Scott Moravik, (708) 968-6411



Central Illinois R/C Car Club, 7015 N. Knoxville Ave., Peoria, IL 61614; Wayne Thompson, (309) 693-8865 or R/C Workshop, 3100 S.W. Adams, Peoria, IL 61605; (309) 673-4860



Central R/C Raceway, RR 2, Box 51-A, Carlinville, IL 62626; Tim Stewart, (217) 854-9718 or Don Rice, (217) 854-3785



Diehard R/C Raceway, 618 N. Main, Kewanee, IL 61443; Dick Jennings, (309) 854-0701



Eagle Speedway, 303 N. Plum St., Pontiac, IL 61764; Joe or Vickie Bachman, (815) 842-1738



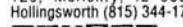
4-H Park Raceway, P.O. Box 774, Pontiac, IL 61764; Joe or Vickie Bachman, (815) 842-1738



Hobby Raceway, 5027 4th Ave., Moline, IL 61265; Tony, (309) 755-5534



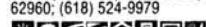
Hobby Town Raceway, 4611 W. Rt. 120, McHenry, IL 60050; Mike Hollingsworth (815) 344-1777



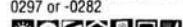
Howell Racing, 492 Egret Ave., Naples, IL 33963; PJ Howell, (708) 474-8821



JC Hobbies/Metro Motor Speedway, Metropolis Airport, Metropolis, IL 62960; (618) 524-9979



JMP Raceway, 952 Harrison Ave., Wood River, IL 62095; (618) 258-0297 or 0282



Lakeside Raceway, S. Germantown Rd., Breez, IL 62230; Scott Merian or Alan Poettiker, (618) 526-4861 or 654-2211



Leisure Hours Hobbies, 2872 Plainfield Rd., Joliet, IL 60435; (815) 439-1477



Lisle Community Park Raceway, 1825 Short St., Lisle, IL 60532; Jim Bernicky, (708) 416-6944



M&E Hobbies & Raceways, 300 N. Milwaukee Ave., Lake Villa, IL 60046; Mark Kaye, (708) 356-3224



Machesney Park, 1220 Shappert Dr., Machesney Park, IL 61115; (815) 282-1311



Magnum R/C Speedway, RR #2, Box 399, Danville, IL 61832; Terry & Nancy Dines, (217) 446-2472



Marty's R/C Hobby, 1335 E. Broadway, Bradley, IL 60915; Gail or Marty, (815) 933-8441



Mercer Co. R/C Off-Road, RR 3 Box 259, Milan, IL 61264; Jamie Wagal, (309) 534-8324



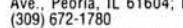
Midwest Hobby Trax, 114 Kirkland Ct., Unit A, Oswego, IL 60543; Duane Pierson or John Koonce, (708) 978-RACE



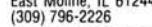
Monee R/C Raceway, 26049 Ridgeland Ave., Monee, IL 60449; Roy or Roberto Moody, (708) 534-2422 (track), (708) 799-5597



Peoria R/C Raceway, 518 Hillsdale Ave., Peoria, IL 61604; Ray Tigue, (309) 672-1780



Precision Speedway, 3919 17 St., East Moline, IL 61244; Dan Kennedy, (309) 796-2226



The R/C Track, 15022 S. Artesian, Harvey, IL 60426; Edmund Johnson, (708) 331-4079



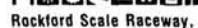
Radio Active Raceways, 751 N. Bolingbrook Dr., #15, Bolingbrook, IL 60440; Jim or Lenny, (708) 759-7557



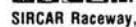
Redline Raceway, 921 Harding, Calumet City, IL 60409; (708) 862-8181



Rick's R/C Raceway, 122 W. 12th St., Streator, IL 61364; Rick Wallace, (815) 673-1870



Rockford Scale Raceway, 6900 N. 2nd St., Machesney Park, IL 61111; (815) 765-2970



SIRCAR Raceway, 1200 N. Marion, Carbondale, IL 62901; (618) 549-5885



Slot Wing Hobbies Race Place, 1615 W. Springfield, Champaign, IL 61821; (217) 359-1920



Smithton Community Park, P.O. Box 8152, Belleville, IL 62221; (618) 236-7569



Superior Raceway, 1706 W. Bradley, Champaign, IL 61821; (217) 359-8073



Thunderroad Speedway, Intersection of Broadway and Division, Coal City, IL 60416; (815) 634-8050



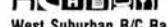
Tri-Star Racing, 3710 B. Hwy. 111, Pontoon Beach, IL 62040; Skip Bornmuller, (618) 931-1206



Valley Farms R/C Raceway, 706 Bypass 20, Cherry Valley, IL 61016; (815) 332-4516



WEF Speedway, RR#2 Box 44, Lawrenceville, IL 62439; Brad Volkman, (618) 884-9048



West Suburban R/C Raceway, 44 S. Villa Ave., Villa Park, IL 60181; Calvin Bruce, (708) 834-7223



INDIANA

Autograph/Race World, 231 Pendleton Ave., Pendleton, IN 46064; Sam Mudd, (317) 778-3386



B.J.'s Riverside Raceway, 265 S. Clay St., Jasper, IN 47546; Joe Lorey, (812) 482-3484



Blaze'n Race'n, P.O. Box 6, Hamlet, IN 46532; James Berndt, (219) 867-1324



Boone County Raceway, 1300 E. 100 S. Rd., Lebanon, IN 46052; Jerry Moss or Allan Luper, (317) 482-4827



CC Hobby & Speedway, RR 1, Box 68, Francesville, IN 47946; (219) 567-2447



Classic Hobbies, 420 E. Commercial, Lowell, IN 46356; David Scheffler, (219) 696-0649



Clayborn II, RR 4, Box 3521, Veedersburg, IN 47987; Mike Rogers, (317) 295-2582



Rimline Raceway and Hobby Shop, 8 Wood Ct., Hebron, IN 46341; Sandra Eaton, (219) 996-6288/shop, 987-2803/home



The Rink, 7900 Whitcomb, Merrillville, IN 46410; Don Reiner, (219) 769-8113



Runway Hobbies Raceway, 534 Elmwood, St. J., Indianapolis, IN 46203; Randy Hyatt, (317) 784-2421

Winner's Circle Speedway, State Road 10 and 55, Roselawn, IN 46310; Harold Holmes, (219) 987-4106

KANSAS

Chad's R/C World & Raceway, 217 Brownie Ave., P.O. Box 76, Scranton, KS 66537; (913) 793-2313

Ebersole R/C Superspeedway, 11417 W. Hwy. 54, Wichita, KS 67209; Len Ebersole, (316) 722-8888

Pittsburg International Mini Speedway, 5111/2 N. Locust, Pittsburg, KS 66762; (316) 232-1973

R/C Superdome & TQ Pro Shop, 14 E. Ave. A, Hutchinson, KS 67501; (316) 665-6633

Track Directory

R/C World Raceway, 217 Brownie Ave., Scranton, KS 66537; Corky or Pam Green, (913) 793-2313



R&R R/C Raceway, 900 N. Santa Fe, Salina, KS 67401; (913) 823-7062



RCRC Raceway, 507 N. 4th, Atwood, KS 67730; Bob Dunker, (913) 626-3261



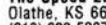
S&K Hobby Shop, 1313 S.W. 21st St., Topeka, KS 66604; Joe Knernschild, (913) 357-0104



Shawnee Hobby & R/C Raceway, 4603 Shawnee Dr., Kansas City, KS 66106; Bill Pugh, (913) 384-3211



The Speed Zone, 12809 Pfleum, Olathe, KS 66062; Brian Bierman, (913) 829-5287



KENTUCKY

A&J Raceway, Hc-64, Box 322-A, Lily, KY 40740; Al Smith, (606) 523-9710



Bluegrass Int'l/Perry's R/C Hobbies, 214 Globe St., Radcliff, KY 40160; William Perry, (502) 351-1940



East Kentucky Hobby Raceway, Hwy. 15, Garner Mt., Isom, KY 41824; (606) 633-8567



Fast Lane Hobbies & Raceway, 281 Porter Pike, Bowling Green, KY 42101; Greg Bailey, (502) 782-2419



Hobby Center Inc., 2106 Triplett St., Owensboro, KY 42303; Bobby Howell, (502) 683-7611



Hobby Plus, 819 Main St., Hazard, KY 41701; Joe Mavar, (606) 436-3175



The Lexington Autodrome Raceway, 2753 Richmond Rd., Lexington, KY 40509; (606) 269-7794



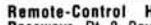
Lexington Model Shop Raceway, 211 New Circle Rd., Lexington, KY 40505; Billy Dent, (606) 293-2951



Mayfield R/C Club, Route 8 Box 2, Mayfield, KY 42066; Ronny Glisson, (502) 674-5633



ProTrak R/C Racing, 3451 Cane Run Rd., Louisville, KY 40211; Tony Hardin, (502) 778-2657



Remote-Control Hobby Shop/Raceways, Rt. 8, Box 211, Mayfield, KY 42066; (502) 247-4715



River Cities Raceway, 1104 Powell Ln., Flatwoods, KY 41139; (606) 836-CARS



Tri-City R/C Raceway, 2420 Riggle St., Ashland, KY 41101; Eddie Williams, (606) 324-6305



West Kentucky R/C Cars, 45 Hawkins Loop, Symsonia, KY 42082; (502) 851-3534



LOUISIANA

Acadiana R/C Hobbies & Raceway, 120 Toledo Dr., Lafayette, LA 70506; (318) 235-5825



Baha Raceways, 2225 Hickory Ave., Harahan, LA 70123; Bruce or Dan Rodriguez, (504) 737-6988



Cajun R/C Raceway, Rt. 2, Box 288 (Hwy. 343, Bosco) Church Point, LA 70525; Ray Thibodeaux, (318) 873-3855



Cajun R/C Raceway, 110 A Darbonne, Sulphur, LA 70663; Sandy Thibodeaux, (318) 527-9129



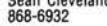
Loupe's R/C, 888A Madeline Ct., Baton Rouge, LA 70815; Mark Loupe, (504) 927-5275



Red Dirt Raceway, 324 Pitkin Rd., Leesville, LA 71446; CJ Hall, (318) 535-9238



Red River R/C, 3232 East 70th, Shreveport, LA 71105; David Gray or Sean Cleveland, (318) 747-1863 or 868-6932



T&M Pro Hobbies, 9212 W. Judge Perez Dr., Chalmette, LA 70043; Tom/Melodie Barthel, (504) 271-3111



MAINE

Central Maine R/C Speedway, 18 Lithgow St., Winslow, ME 04901; David Prescott, (207) 877-2232



Clay Bowl R/C Hobbies, P.O. Box 61, Greene, ME 04236; Pat Cap, (207) 946-5003



Sabattus R/C Raceway, 247 Gardiner Rd., Sabattus, ME 04280; Larry Desrosiers, (207) 225-2027



Hobbies Plus, 479 Elm St., Biddeford, ME 04005; John Williams, (207) 282-8838



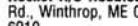
Lake Region R/C Raceway, Route 302, Bridgton, ME 04009; George Kosavelan, (207) 647-8831



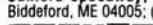
Mementos Hobby Shop, 86 Sweden St., Caribou, ME 04736; (207) 498-3711



Rocket R/C Hobbies, AnnaBessacook Rd., Winthrop, ME 04364; (207) 377-6910



Sanford Speedway, 479C Elm St., Biddeford, ME 04005; (207) 282-8838



The Racers' Club, 85 Hubbard Rd., Berwick, ME 03901; (207) 698-5337



Wallbanger Heaven, 50 Elm St., Houlton, ME 04730; Jack Newman, (207) 532-3169



MARYLAND

ABC Raceway, 2825 Ocean Gateway, Cambridge, MD 21613; (301) 228-4291



Bel Air R/C Raceway, 227G Gateway Dr., Bel Air, MD 21014; Jeff Little, (410) 838-1229



Cockeysville Astrodome, 10824 York Rd., Cockeysville, MD 21030; (410) 666-1098



Doug's Hobby Shop Raceway, 2935 Crain Hwy., Waldorf, MD 20601; (301) 843-7774



40 Speedway, 933 Pulaski Hwy., Havre de Grace, MD 21078; Doug or Vince, (410) 538-3135 or 939-3588



Friendship Off-Road Racers, 1531 Florida Ave., Severn, MD 21144; (301) 551-3050



Fruitland Indoor Race Center, 203 N. Fruitland Blvd., Fruitland, MD 21826; Thomas Duncan, (410) 543-4329



Radio Control Cars Inc., 13600-A Annapolis, Bowie, MD 20715; Paul Faith, (301) 262-1444



Suzie Goose Hobbies, 718 E. Gude Dr., Rockville, MD 20850; (301) 279-2966



The Track, 16806 Oakmont Ave., Gaithersburg, MD 20877; Mimi Wong, (301) 417-9630



Woolland Hobbies and Raceway, 2017 Crain Hwy., Waldorf, MD 20601; Perry Pritchard, (301) 870-0293



W

MICHIGAN

Baja Bayou Off-Road Raceway, 5313 W 22 Mile Rd., Tustin, MI 49688; Mike Langworthy, (616) 829-3447



Can-Am Hobbies Speedway Park, 1152 Gratiot, Marysville, MI 48040; Don Grinde, (313) 364-3338



Central Michigan R/C Raceway, 1270 James Savage, Midland, MI 48640; Mark Siebert, (517) 631-1488



Cereal City R/C Off-Roaders, 2000 E. Columbia Ave., Battle Creek, MI 49015; (616) 963-2506



Chatter Box Racing, P.O. Box 164, Old State Rd., Central Lake, MI 49622; Bill Alterott, (616) 544-9829



Dirt Slingers Raceway, 2460 S. M-139, Benton Harbor, MI 49022; Tom Edwards, (616) 927-1431



DNR Speedways, 4630 Hill Rd., Harbor Beach, MI 48441; Kelcey, (517) 479-6097



Doug's Dirt Way, 5210 Colby Rd., Owosso, MI 48867; Doug Conn, (517) 723-3368



Elmer's R/C Speedway, 2683 Lakeshore Dr., Niles, MI 49120; Randy or Kristi Easton, (616) 683-7380



Farwell Park Raceway, 2781 E. Outer Dr., Detroit, MI 48243; Eddie McCray, (313) 967-0805



Fun Tyme High-Banked Oval, Fun Tyme Adventure Park, 6295 E. Saginaw Hwy., Grand Ledge, MI 48837; (517) 655-5503



Harrison International Speedway, 3519 N. Clare Ave., Harrison, MI 48625; John Starkweather, (517) 539-2921



J.J.'s R/C Speedshop, 5645 E. 13 Mile Rd., Warren, MI 48092; (313) 977-0420



JT Superspeedway, 825 Golden Ave., Battle Creek, MI 49017; Jerry or Dan, (616) 965-0571



Larry's Performance R/C's, 3430 Highland Rd., Waterford, MI 48328; Larry Rossi, (313) 683-5529



Ludington R/C Raceway, 1483 N. Dennis Rd., Ludington, MI 49431; (616) 843-4654



Mason County R/C Car Track, West Community College, (611 N. Washington Ave., Ludington, MI 49431) Scottsville, MI 49454; (616) 843-8553 or 843-4837



Mike's Speedway, 1210 Federal St. (Rt. 9), Belchertown, MA 01035; Steve or Mike, (413) 253-9312



Naytrix Raceway, Holmes Rd., Pittsfield, MA 01201; Rick Welch or Nate Zuckerman (413) 443-2488 or 443-9886



North East Auto Racers, P.O. Box 12, Merrimac, MA 01860; George Denault, (508) 346-8456



R/C Hobbies & Speedway, 562B Reed Rd., N. Dartmouth, MA 02747; Rick or Dave, (508) 991-5040



North St. Hobbies, 114C Main St., Medway, MA 02053; (508) 533-1231



Newberry R/C Raceway, RR 3 Box 2860, McMillan, MI 49853; Frank, (517) 773-5711



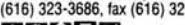
Pointe R/C, 2119 Summerton Rd., Mt. Pleasant, MI 48858; (906) 293-3044



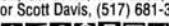
R&B Raceways, P.O. Box 24, St. Louis, MI 48880; Russ or Brian Weaver, (517) 681-3688 or (517) 463-1886



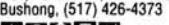
R&S Hobbies & Raceway, 230 Mill St., St. Louis, MI 48801; Rich Beard or Scott Davis, (517) 681-3463



Rad & Bad Raceway, 810 S. Martin Rd., Gladwin, MI 48624; Mick Bushong, (517) 426-4373



Radio Wave Hobbies, 14000 Old 14 Mile Rd., Greenville, MI 48838; (616) 754-2170



Rider's Superspeedway, 42040 Koppenick, Ste. 400, Canton, MI 48187; Brent Martin, (313) 451-5599



Rider's Superspeedway, 4415 S. Westedge, Kalamazoo, MI 49008; Ken Penn (616) 349-2666



Sugar Ray's Raceway, 1948 Ford, Wyandotte, MI 48192; Ray or Kathy, (313) 281-3520



T/A Raceway, 119 N. Michigan, Big Rapids, MI 49307; Harvey, (616) 796-3217



Thumb Raceway, 3441 S. Main St., Marlette, MI 48453; (517) 635-7848



TNT R/C Raceway, 130 W. Washington St., Marquette, MI 49855; Gregory Berg, (906) 228-4098



USA Raceways, 6803 Dixie Hwy., Bridgeport, MI 48722; (517) 777-7327



Village Hobbies-n-Crafts, 195 N. Elm, Hesperia, MI 49421; Alan or Fran, (616) 854-1374



MINNESOTA

ABC Raceway, 120 2nd St. NW, Pipestone, MN 56164; Ross Lange, (507) 825-5065



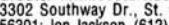
Caesars Sport & Hobby, 312 N. Bdwy., Crookston, MN 56716; Caesar Kaiser, (218) 281-6665



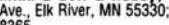
Dr. Skale's R/C Raceway, Frontage Road, La Crosse, MN 54601; Gary Behrens, (608) 788-6141



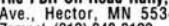
Greater Minnesota Racin' Place, 3302 Southway Dr., St. Cloud, MN 56301; Jon Jackson, (612) 252-9768



Minn-E-Golf & Hobby, 9100 Park Ave., Elk River, MN 55330; (612) 441-8365



The PBR Off-Road Rally, 721 Cedar Ave., Hector, MN 55342; Philip Zempel, (812) 848-2129



Range Racing World, Inc., 412 Jones St., Evele

PROLINE

XTR COMPOUND 8000 SERIES



Flat stubbies (8086)

Since the release of our XTR-Compound tires, we've noticed that the drivers who use these tires have been on a rampage—a race-winning rampage! More drivers are using the Pro-Line XTR tires than any other brand on the market; and the tires' superiority is constantly being proven at world-class racing events.

Brian Kinwald used Pro-Line XTR tires to get race-winning traction when he stormed the ROAR Off-Road Nationals. Not only

did Brian take the 2WD Open Class, but he also aced the Modified 4WD division and then made it a clean sweep for '93 by triumphing at the ROAR Truck Nationals. So what does a hot-shot driver like Brian do after taking the Nationals? He heads for the IFMAR World Championship to destroy the competition by winning the 2WD Off-Road World Championship crown—of course, using Pro-Line XTR tires. Masami Hirosaka was obviously impressed: he chose the Pro-

Line XTRs to get the traction he needed to take the 4WD Off-Road World Championship title.

Pro-Line XTR tires were designed by craftsmen who have a passion for making tires that *win!* Their skills are now available to you. You, too, can have the winning edge in racing. The superior traction and durability of the Pro-Line XTR-Compound tires have often been imitated, but never duplicated. Why mess around with anything else? Choose the tires that are finishing first all over the world—Pro-Line XTRs!

Free foam inserts are included with all XTR Compound tires.



RACING TO BRING YOU THE BEST!

Southside Speedway, 2241 Marion Rd. SE, Rochester, MN 55904; Kevin, (507) 281-3233



Squid's R/C Autos, 924 Main Avenue, Moorhead, MN 56560; Jeff Greenwell, (218) 233-3554



Tracksider Racing, 2300 Myrtle Ave., St. Paul, MN 55114; Winton Ottelie, (612) 644-3424



Wild West R/C Speedway, 2822 Piedmont Ave., Duluth, MN 55811; Roger Deloach, (218) 727-6248



MISSISSIPPI

Crossroads Raceway, 904 Cass St., Corinth, MS 38834; (601) 287-2110



Dixieland R/C Speedway, 2535 Tabernacle Rd., Columbus, MS 39702; Jeffrey Alvey, (601) 328-9429



Fast Freddy's Raceway, 20390 Hwy. 49, Saucier, MS 39574; Mark Payne, (601) 832-0315



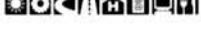
Joe McFadden Hobbies, 1619 51st Ave., Meridian, MS 39307; Joe McFadden, (601) 483-7000



Norm's R/C Hobbies, 602 W. Old Pass Rd., Long Beach, MS 39560; Norm, (601) 863-0524



Small Cars Unlimited, 820 Cooper Rd., Jackson, MS 39212; (601) 372-FAST



MISSOURI

All Seasons Hobby, 152 O'Fallon Plaza, O'Fallon, MO 63366; Bob Daniels, (314) 281-8767



Blue Speedway, 12019 E. 47th St., Kansas City, MO 64133; Mark Rando, (816) 358-0238



Doug's Hobbies, 5221 Veil of Tears, Jefferson City, MO 65109; (314) 893-5861



Fast Eddie's, 10 S. Coffman, Flat River, MO 63601; Eddie Smith, (314) 431-3303



Fast Trax Racing Assoc., 212 N. Lulwood, Springfield, MO 65082; Ken Pope, (417) 831-5046



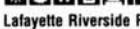
Gateway R/C Track & Hobbies, 255 Marshall Rd., P.O. Box 345, Valley Park, MO 63088; (314) 225-5844



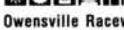
Harrisonville Hobby Shop & Raceway, 2301 S. Commercial, Harrisonville, MO 64701; Richard Taylor, (816) 887-3055



Hobbies 'n' Stuff Raceway, 102 W. Pearce Blvd., Wentzville, MO 63385; John Gerhardt, (314) 327-6006



Lafayette Riverside Raceway, P.O. Box 9663, Marshall Rd., Kirkwood, MO 63122; Don Lanningham, (314) 966-8912



Owensville Raceway, Hobby Shop & More, 115 N. First St., Owensville, MO 65066; Mike Brune, (314) 764-3461



Ozark Hobby, Rt. 6, Box 248-3, Ozark, MO 65721; Deborah Adkisson, (417) 485-4552

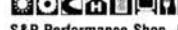


RACING TO BRING YOU THE BEST!

Pevely R/C Raceway, 2199 Meadow, Barhart, MO 63012; Jerry Benz, (314) 464-8627



R Hobby, 590 Jungemann Rd., St. Peters, MO 63376; (314) 928-9838



S&P Performance Shop, 5383 Highway "N" St. Charles, MO 63304; Paul Lund, (314) 447-5252



Suppenbach Winter Racing, Route 5, Box 66, Pleasant Hill, MO 64080; Larry Suppenbach, (816) 987-5828



MONTANA

Bozeman R/C Powerhouse Track, west side of the Main Mall, Bozeman, MT 59715; (406) 586-6461



Garden City Raceway, 118851/2 Hwy. 93, Lolo, MT 59847; Dave Erickson, (406) 273-2776



Hobbytown Raceway, 17 Tai Lane, Bozeman, MT 59715; Tom Duncan, (406) 587-3512



Magic City R/C Raceway, 14th St. W. & Central Ave., Billings, MT 59101; (406) 259-9004



Pockets Raceway, Montana State Fairgrounds, Great Falls, MT 59405; Greg Vetter, (406) 761-7279



Stormer Raceway, 23 High Speed Road, Glasgow, MT 59230; Mike Stormer, (406) 228-4569

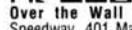


NEBRASKA

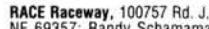
Hobby Town USA, Park Island Square, 3537 W. 13th St., Grand Island, NE 68803; Ed Conroy, (308) 382-3451



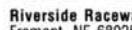
Mr. Bill's, 450 West 2nd St., Hastings, NE 68901; Bill J. Ries, (402) 462-4865



Over the Wall Gang, Higiroabee Speedway, 401 Market Pl., Norfolk, NE 68701; Matt Moeller, (402) 379-0879



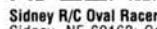
RACE Raceway, 100757 Rd. J. Mitchell, NE 69357; Randy Schamaman, (308) 623-1490



Riverside Raceway, Hwy. 77 South, Fremont, NE 68025; Jeff Richter, (402) 721-3379



The Salvation Army, 4032 Harrison St., Omaha, NE 68147-1012; Lt. Michael Delashmit, (402) 634-3414



Sidney R/C Oval Racers, 932 10th Ave., Sidney, NE 69162; Gale Talich, (308) 254-3131



NEVADA

AMS R/C Raceway, 1130 Icehouse Ave., Sparks, NV 89431; Terry Ramsey, (702) 355-8803



Little City Hobbies Raceway, 640 Kuenzki, Reno, NV 89503; shop, (702) 786-3611 or Bill Avery, (702) 358-7629



R/C Fever, 3580 Polaris, Suite 2, Las Vegas, NV 89103; Jim or Darin, (702) 367-RACE



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Track Directory

Silverbowl Speedway, 7274 Hardtack Cir., Las Vegas, NV 89119; Mike, (702) 896-3577



Western R/C, 6404 Richmar, Las Vegas, NV 89139; Randy Grigg or Mitch Strete, (702) 897-7227



NEW HAMPSHIRE

Fastracker Club, 520 Washington St., Keene, NH 03431; Bill Phillips or John O'Connor, (603) 352-0811 or 357-8393



4-K Racing, 100 Warwick Rd., Winchester, NH 03470; (603) 239-6207



Hobby Etc., Heritage Place, Rt. 101A, Amherst, NH 03031; (603) 595-8549



Hooksett Hobby Raceway, 1328 Hooksett Rd., Hooksett, NH 03106; (603) 625-2420



Lake Region R/C Speedway, Lily Pond Rd., Laconia, NH 03246; Louie Blais, (603) 524-2909



NE Hobbies R/C Raceway, 49 Eaton Hill Rd., Auburn, NH 03032; Chuck Therriault, (603) 483-2274



Robert's Railroad & Hobbies, Box 431, Rt. 4 at Rt. 152, Northwood, NH 03261; Robert Jeffers, (603) 942-5193



NEW JERSEY

AI & Rich's R/C Speedway, 90 S. White Horse, Hammonton, NJ 08037; Ray Murray, (609) 561-7584



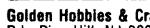
Dave Bicknell Memorial Raceway, P.O. Box 1445, Absecon, NJ 08201; Rob Caruso, (609) 965-0263



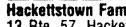
EMC Tracks & Trains, 1235 Rt. 23 South, Wayne, NJ 07470; (201) 628-4838



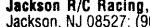
Family Hobbies Raceway, NW Blvd. & Weymouth Rd., Vineland, NJ 08360; Linda Vogel, (609) 696-5790



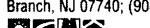
Golden Hobbies & Crafts, 415A Erial Rd., Pine Hill, NJ 08021; (609) 782-1222



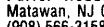
Hackettstown Family Skating Center, 13 Rte. 57, Hackettstown, NJ 07840; Bob Powers, (908) 852-8726



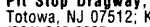
Jackson R/C Racing, Marshall Ave., Jackson, NJ 08527; (908) 905-1593



LBRA Track, 392 Warburton Pl., Long Branch, NJ 07740; (908) 222-5122



Parlor Hobbies, 34 Broad St., Matawan, NJ 07747; Charlie Roder, (908) 566-3158



Pit Stop Dragway, Campus Rd., Tottowa, NJ 07512; Kimberly Frank, (201) 942-5955



Pixley International Speedway, 763 Peters Dr., P.O. Box 189, Martinsville, NJ 08836; Richard Toole, (908) 560-0399



The Race Place, 1151 Hwy. 33, Farmingdale, NJ 07731; John Fary, (908) 938-5215



Radical Raceway, 100 Rt. 17S, Lodi, NJ 07727; Lou, (201) 843-6996



Ricky G's Raceway, 2208A Hamilton Blvd., South Plainfield, NJ 07080; (908) 753-1518



S&M Speedway, 4 Field Rd., Bedminster, NJ 07921; Lee Spano, (908) 234-2750



Spernel Speedway, 2301 Rte. 9 North, Great American Flea Market, Howell, NJ 07731; Mitch, (908) 577-9191



Tri-Oval Speedway & R/C Center, 296 S. Main St., Phillipsburg, NJ 08865; (908) 454-2223



Truck Challenge, 1162 Rt. 202-206 N., Bridgewater, NJ 08807; Michael Gill, (908) 658-9616



Zeppelin Hobbies, 92 Rt. 23N, Riverdale, NJ 07457; Lou Ballini, (201) 831-7717



NEW MEXICO

Hobby Connection Raceway, 1713 Indian Wells Rd., Alamogordo, NM 88310; Terry Billings, (505) 437-0885



Roswell R/C Raceway, 1004 N. Greenwood, Roswell, NM 88201; Larry Jumper, (505) 623-6693



TRC Race Park, 1303 E. 8th St., Truth or Consequences, NM 87901; Gary Whitehead, (505) 894-3211



NEW YORK

A&D's FasTracks, 1000 N. Main St., Brewster, NY 10509; (914) 279-2065



A&S Race Center & Hobbies, 120 Cayuga St., Canavieer Mall, Fulton, NY 13059; (315) 598-2772



Adirondack International, 66 Elm St., Warrensburg, NY 12885; Matt or Jake Wiedman, (518) 623-9611



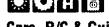
Aldon Speedway, 100 Castle St., Geneva, NY 14456; (315) 789-8343



Brockport Speedway, 6000 Sweden Walker Rd., Brockport, NY 14420; Gil & Betty Glidden, (716) 637-6224



Brownie's Pro & Sports Hobbies, 124 Bennett St., Staten Island, NY 10302-1426; John Brown, (718) 727-2194



Cars, R/C & Guitars, 4360 Seneca St., West Seneca, NY 14224; (716) 674-0905



Capitol District R/C Racers, 27 Venus Dr., Albany, NY 12205; Keith Green, (518) 783-7859



Catskill Regional R/C Raceway, Glasco Turnpike, Mt. Marion, NY 12456; (914) 339-3294



Central New York R/C Auto Racers, Martin St., P.O. Box 116, Rome, NY 13440; John Orr, (315) 336-5140



Chipmunk Hill R/C Speedway, 217 Pine St., Theresa, NY 13961; Ted House, (315) 628-5065



Creekside R/C Raceway Park, 5242 Route 228, Trumansburg, NY 14886; Lawrence C. Updike, (607) 387-5513 after 6 pm.



D&J's Speedway, 94 Maple St., Croton-on-Hudson, NY 10520; Dan Spatta, (914) 271-5797



Daytona Miniature Raceway, 59 Lamar St., W. Babylon, NY 11704; (516) 491-4041



Dirt Track, 17 Fairway Dr., Manorville, NY 11949; Billy Wroblewski, (516) 878-0737



East Coast Barn Stormers, MD #1 Old Oxford Rd., Chester, NY 10918; Michael or Lou, (914) 469-5883



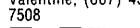
Electric City Speedway, 955 State St., Schenectady, NY 12307; Jim Delyser, (513) 372-7920



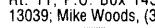
Enjoyable Hobbies and Raceway, 260 Ronkonkoma Ave., Lake Ronkonkoma, NY 11779; (510) 588-6994



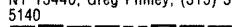
Foothills R/C Racing Club, RD 1, Box 1156, Maryland, NY 12116; Steve Valentine, (607) 433-1860 or 432-7508



Gamlen's R/C Motor Speedway, 8453 Rt. 11, P.O. Box 1430, Cicero, NY 13039; Mike Woods, (315) 699-2991



GP Racing, 6785 Martin St., Rome, NY 13440; Greg Philley, (315) 336-5140



HobbyTown USA, 629 Plank Rd., Clifton Park, NY 12065; Larry Burwell, (518) 383-1215



Jerry's Raceway, 111 S. Applegate Rd., Ithaca, NY 14850; Jerry and Lori Achilles, (607) 277-0940



Lakeside Raceway & Hobbies, 712 Willow Ave., Ithaca, NY 14850; (607) 272-0248



Latest Hobbies & Raceway, 781 Rt. 25A, Rocky Point, NY 11778; Joe Jolin, (516) 929-8844, fax, (516) 929-5002



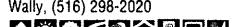
LI 1/4-Scale Racers, 63 Horton Dr., Huntington Station, NY 11746; (516) 351-5384



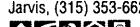
Maspeth Raceway, Rust St. & 57 Rd., Maspeth, NY 11378; Walter, (718) 897-7921



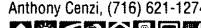
Mattituck Hobbies & R/C Raceway, 7335 Main Rd., Mattituck, NY 11952; Wally, (516) 298-2020



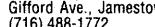
Norwood Hobbies Raceway, 2-4 S. Main St., Norwood, NY 13668; Tom Jarvis, (315) 353-6621



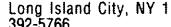
Performance Hobbies Raceway, 205 North Ave., Webster, NY 14580; Anthony Cenzi, (716) 621-1274



Performance Plus R/C Speedway, The Hobby House, 1141/2 Jones & Gifford Ave., Jamestown, NY 14701; (716) 488-1772



Queens Off-Roaders, 42-12 13th St., Long Island City, NY 11101; (718) 392-5766



Western New York R/C Speedway, 58 Spring St., Cuba, NY 14727; Jason Congdon, (716) 968-3586



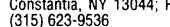
Whitestone Off-Road Raceway, 149-50 15th Rd., Whitestone, NY 11357; Whitestone Hobbies, (718) 767-6767



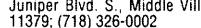
R/C Competition Corner, K-Mart Plaza, Mattydale, NY 13211; (315) 455-8718



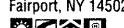
R/C Hobbies, Rt. 49, Box 138, Constantia, NY 13044; Roy Catholdi, (315) 623-9536



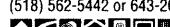
R/C World Hobby Center, 69-57 Juniper Blvd. S., Middle Village, NY 11379; (718) 326-0002



R&S Hobbies, 356 Macedon Ct. Rd., Fairport, NY 14452; (716) 425-3722



Race O Rama, 44 Sharon Ave., Plattsburgh, NY 12901; James Varno, (518) 562-5442 or 643-2678



Raceway R/C, Budd Rd., Phillipsport, NY; Joe Columbo Jr., (914) 754-7664



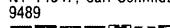
Rampage R/C, 27 Fuller Ln., Hyde Park, NY; Brian Walke, (914) 229-2456



Ransomville R/C Raceway, 2576 Academy St., Ransomville, NY 14131; Irene Preisich, (716) 791-8310



Rock River Model Hobbies, RD 2, Box 297, Rock River Rd., Interlaken, NY 14847; Carl Schmidt, (607) 532-9489



Schoharie Co. R/C Car Club, P.O. Box 126, Cobleskill, NY 12043; (518) 234-4600



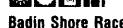
Seneca R/C, 2339 Yerkes Rd., Romulus, NY 13451; (315) 789-8343



Skaneateles Raceway & Hobby, P.O. Box 102, Rt. 20, W. Genesee St., Skaneateles, NY 13152; (315) 685-8077

NORTH CAROLINA

B-n-B R/C Raceway, 7805 S. Airazona Dr., Raleigh, NC 27604; Craig Barber, (919) 678-8407



Badie Shore Raceway, 1730 Jackson Lake Rd., High Point, NC 27263; Jimmy or Tim Martin, (919) 431-9258



Big Kids Little Toys, 407-B Pomona St., Greensboro, NC 27407; Joe Stewart, (919) 299-3355



C&H Raceway, 1400 N. Cannon Blvd., Kannapolis, NC 28083; Camera & Hobby Shop, (704) 933-5321



Cape Fear Speedway, 207 Harley Rd., Wilmington, NC 28401; Bob Justice, (919) 762-1184



Carolina R/C Drag Assoc., 907-C Warsaw Rd., Clinton, NC 28328; (919) 592-9489



Carolina Hobbies R/C Raceway, Route 1, Box 158, Taylorsville, NC 28681; Kim & Roseanne Kulawik, (704) 495-4040



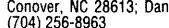
Clapp's R/C Motor Speedway, Rt. 4, Box 300A, Siler City, NC 27344; Al Clapp, (919) 663-3198



Clinton R/C Raceway, 907-C Warsaw Rd., Clinton, NC 28328; Corbett Marshburn, (919) 592-9489



Granite City R/C Raceway, 192-1 N. Main St., Mt. Airy, NC 27303; (919) 786-1466



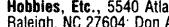
Hi-Performance Hobbies & R/C Raceway, P.O. Box 320, Earl, NC 28038; Derrell Hollifield, Steve Bliss, (704) 482-4391



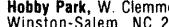
Hobbies, Etc., 5540 Atlantic Springs, Raleigh, NC 27604; Don Asplen, (919) 790-1444



Hobby Park, W. Clemmonsville Rd., Winston-Salem, NC 27103; Dick Butler, Parks & Recreation, (919) 727-2063



The Hobby Speedway, Hwy. 25, P.O. Box 279, Naples, NC 28760; Jerry or Kelda Bowers, (704) 684-9814



Jacksonville International Raceway, E. Thompson St., Jacksonville, NC 28540; Penny, (919) 346-1522



Motorlead R/C Raceway, 125 Park St., Canton, NC 28716; (704) 648-7911



Mountain R/C Raceway, Hwy. 107N, P.O. Box 67, Glenville, NC 28736; (704) 743-3709



Outlaws Fastrax Hobbies Raceway, 1013 Old Hendersonville Hwy., Brevard, NC 28712; Jeff Laws, (704) 885-RACE (7223)



PC Hobbies, 143 Industrial Dr., King, NC 27021; Mike Ingles, (919) 983-2514



Reedy Creek Raceway, Rt. 14, Box 946, Conard Sowers Rd., Lexington, NC 27292; (704) 731-4022



Rosewood Speedway, Rt. 5, Box 853, Goldsboro, NC 27530; Glenn Elam, (919) 731-4734



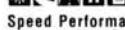
S&B Speedway & Hobbies, Rt. 1, Box 311A, Farmville, NC 27828; Ricky Strickland or Van Bibbs, (919) 753-4229 or 749-1468



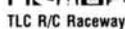
Sandhills Raceway Inc., US #1 South, Aberdeen, NC 28315; (919) 944-7414



Smiley Face Raceway, 120 W. Center St., Mebane, NC 27302; (919) 563-3822



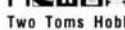
Speed Performance, 4121 Lower Moncure Rd., Sanford, NC 27330; Howard Everett, (919) 774-3843



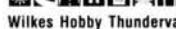
TLC R/C Raceway, Rt. 6, Box 321-A, Hwy. 601, Mocksville, NC 27028; (704) 492-7569



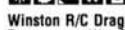
TNT R/C Raceway, 707 N. Salisbury Ave., Salisbury, NC 28159; Larry Martin, (704) 633-0647



Two Toms Hobbies, 155 Boone Square St., Hillsborough, NC 27278; Tom York, (919) 732-6221



Wilkes Hobby Thundervalley Raceway, Rt. 1, Box 350-B, Wilkesboro, NC 28624; (919) 973-3734



Winston R/C Drag Series/Hobby Park Dragway, W. Clemmons Rd., Winston-Salem, NC; Jack Wright, (919) 983-9416



NORTH DAKOTA

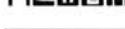
Crystal Springs Off-Road, 1200 53 Ave. SW, Minot, ND 58701; (701) 852-9590



Hacienda Hills Speedway, 20 Hacienda Hills, Minot, ND 58701; Kenny Duchscherer, (701) 839-4419



Northern Mini Racers, P.O. Box 415, Minot, ND 58702; Patrick McWethy, (701) 839-8868

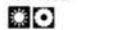


OHIO

AAAction Speedway, P.O. Box 6, Morral, OH 43337; Tim McKnight, (614) 465-9891 or Bill Harris, (614) 387-5912



AD R/C Raceway, 5096 Rt. 127 S., Eaton, OH 45320; Aaron Garrett, (513) 452-1662



Aerotech Raceway, 409 Applegrove Rd., North Canton, OH 44720; (216) 499-1300



Aircraft's R/C Raceway, 1370 Custer-Orangeville Rd., Brookfield, OH 44403; (216) 448-1573



Alternative Racing Association, Canton R/C Speedway, 2600 17th St., East Canton, OH 44730; Neal Everhart, (216) 484-2587



Bryan Thunderdrome, Townline Rd., Bryan, OH 43506; Jeff Lehmann, (419) 636-9100



Buckeye Pulling Tracks, State Rt. 68, Xenia, OH 45385; Mark Hartings, (513) 376-8334



C/R Hobbies Top Race Track, 323 Center St., Ashtabula, OH 44004; Virginia Gagat, (216) 992-3833



Classic Hobbies & Raceway, 2845 W. Waterloo Rd., Akron, OH 44312; (216) 628-3222



D&J R/C Raceway, 801 W. Market St., Orrville, OH 44667; Don Yoder or Mark Nussbaum, (216) 682-4266



D&S Hobbies Raceway, 7701 Crile Rd., Concord, OH 44077; (216) 354-2112



FIA Speedway, 1001 Old Columbus Rd., Wooster, OH 44676; Roger Franks, (216) 264-1848



Flag City Raceway, 721 Rockwell Ave. (track address: 3772 C.R. 18), Findlay, OH 45840; Ruth Hubbard, (419) 422-5589



Golden Bear Hobbies, 154 N. Millbourne Rd., Orrville, OH 44667; Bob Rodi, (216) 683-1250



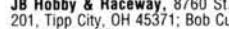
Hi Tech Hobbies II, 116 S. Taylor St., Loveland, OH 45140; Rick Lewis or Richard Kosar, (513) 683-8900



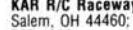
Hobby Mania Raceway, 6597 Route 224, Lowellville, OH 44436; (216) 536-8282



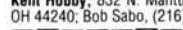
Innovative Hobbies/Lakeside Speedway, 3427 Manchester Rd., Akron, OH 44319; (216) 645-1333



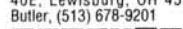
JH Hobby & Raceway, 8760 St. Rt. 201, Tipp City, OH 45371; Bob Curtis, (513) 845-8222



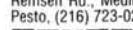
KAR R/C Raceway, 14511 Seacrist, Salem, OH 44460; Reid Tarves, (216) 537-4039



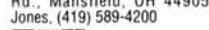
Kent Hobby, 832 N. Mantua St., Kent, OH 44240; Bob Sabo, (216) 673-0422



Medina City R/C Raceway, 3414 Remsen Rd., Medina, OH 44256; Eric Pesto, (216) 723-0255



Lewisburg R/C Raceway, 395 US Rt. 40E, Lewisburg, OH 45338; Gene Butler, (513) 678-9201



Midway Racetrack, 2601 Ashland Rd., Mansfield, OH 44905; Greg Jones, (419) 589-4200



Parma Speedway, 5729 Ridge Rd., Parma, OH 44129; Sam Belsito, (216) 845-3706



Parma Speedway, 5729 Ridge Rd., Parma, OH 44129; Sam Belsito, (216) 845-3706



Paulding R/C Speedway, 103 N. Main, Paulding, OH 45879; Virgil Simminger, (419) 238-0633



The Racer's Choice R/C Hobbies & Raceway, 1298 US Rt. 42, Mason, OH 45040; (513) 398-5539



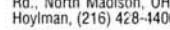
RBI R/C Speedway, 110 Springdale Ave., Wintersville, OH 43952; Frank Luckino, (614) 264-9101



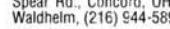
Right Choice Hobbies, 7760 Garrison Ave., Cincinnati, OH 45247; (513) 355-3343



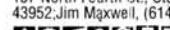
Rolling Thunder, 1945 North Hubbard Rd., North Madison, OH 44057; John Hoylman, (216) 428-1406



Sleepy Hollow Raceway Park, 11189 Spear Rd., Concord, OH 44077; Gary Waldheim, (216) 944-5898



Steel Valley Hobbies & Raceway, 157 North Fourth St., Steubenville, OH 43952; Jim Maxwell, (614) 282-3003



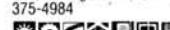
Strongsville Speedway, 13315 Prospect, Strongsville, OH 44136; (216) 572-0430



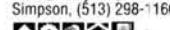
Trusso's R/C Raceway, 100 W. Crain Ave., Kent, OH 44240; Bill, (216) 673-0422



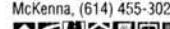
Way Out Hobbies, 5583 Centerpoint Rd., Georgetown, OH 45121; (513) 375-4984



Woodlane Raceway, 2300 E. Dorothy Lane, Dayton, OH 45420; Jeff Simpson, (513) 298-1166



Y-City Hobby & Speedway, 120 S. 6th St., Zanesville, OH 43701; Kevin McKenna, (614) 455-3025



OKLAHOMA

Ace Raceway, 2608-768 Villa Prom. (Shepherd Mall), Oklahoma City, OK 73107; Mike McLish, (405) 947-5937



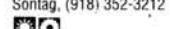
Adams Creek R/C Speedway, 5207 S. 44th E. Ave., Broken Arrow, OK 74014; John Beigle, (918) 355-1416



Coweta Hobby & Speedway, 310 S. Broadway, Coweta, OK 74429; Derrial Seabolt, (918) 486-3948



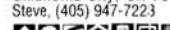
Matt's Flying "M" R/C Raceway, 111 W. 4th, Shamrock, OK 74058; Matt Sontag, (918) 352-3212



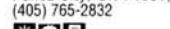
Off-Road Car Assoc. of Tulsa, 9720 Swan Dr., Broken Arrow, OK 74014; George Gooch, (918) 486-4528



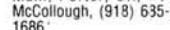
RCRC, 400 S. Vermont, Suite 104, Oklahoma City, OK 73108; Rick or Steve, (405) 947-7223



Sundown Raceway, 526 Virginia Ave., Ponca City, OK 74601; Ryan Trant, (405) 765-2832

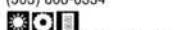


Wild Country Speedway, 127 South Main, Porter, OK, 74454; Charles McCollough, (918) 635-0372 or 687-1686



OREGON

Catch Some Air, 44855 SE Wildcat Mountain Dr., Sandy, OR 97055; Erik, (503) 668-8334



Cathie's R.C. World, 443 So. Calapooia, Sutherlin, OR 97479; Wes/Cathie Buzzard, (503) 459-2746



Competition Racing Assoc., 17941 NE Glisan, Portland, OR 97230; Mark Taylor, (503) 257-0796



Fast Track Recreations, 18023 SE Addie Rd., Milwaukie, OR 97267; Dale Nielsen, (503) 659-7661



The Finish Line R/C Raceway, 560 W. D' St., Apt. 6, Creswell, OR 97426; Rod Carothers, (503) 895-4395



Hobby Center, 1740 Geary St. SE, Albany, OR 97321; Ron Juhnke, (503) 928-5255



Mt. Bachelor Radio Raceways, 225 Century Dr., Bend, OR 97701; Rex Baldwin, (503) 389-6160



North Lawrence Raceway, 36 N. Lawrence, Eugene, OR 97401; Gary Hill, (503) 484-9857



Rolling Thunder, 1945 North Hubbard Rd., North Madison, OH 44057; John Hoylman, (216) 428-1406



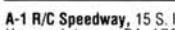
Sleepy Hollow Raceway Park, 11189 Spear Rd., Concord, OH 44077; Gary Baldwin, (503) 389-6160



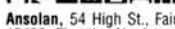
The Finish Line R/C Raceway, 560 W. D' St., Apt. 6, Creswell, OR 97426; Dale Nielsen, (503) 895-4395



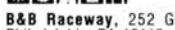
R/C Plus Hobbies Raceway, 2029 25th St. SE, Salem, OR 97302-1130; Ron Smith, (503) 389-9188



R/C Speed Center, 2810 N. Pacific Hwy., Medford, OR 97501; (503) 779-8298



R/C Speed Center, 2810 N. Pacific Hwy., Medford, OR 97501; (503) 779-8298



Hobby America Raceway, 5 Fitzsimmons St., Duke Center, PA 16729; Dan or Mike Coast, (814) 966-3765



Hobby Heaven, 1845 Rt. 422 West, Indiana, PA 15701; Scott McAdoo, (412) 463-8010



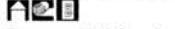
Hobby House Raceway, Downingtown Marketplace, Downingtown, PA 19335; J.T. Nelson, (215) 269-1300



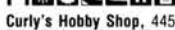
Hobby World Raceway, 172 Shillington Rd., Sinking Spring, PA 19608; Mike Wentzel, (215) 678-8760



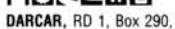
JR Hobby Shop & Raceway, 1806 Nagle Rd., Erie, PA 16501; Ron Bradear, (814) 898-1816



Koontz's Home & Hobby Center, 1205 Hoover St., Pittsburgh, PA 15204; (412) 331-3866



Kranzel's R/C Raceway & Hobbies, 415-B Bosler Ave., Lemoyne, PA 17043; David or Stuart Kranzel, (717) 737-7223



L&R R/C Racing, 15 S. Main St., Red Lion, PA 17356; Larry & Randy Shoemaker, (717) 244-1108



Main Hobby Race Center, 501 E. Lackawanna Ave., Olyphant, PA 18447; Dave or Zig, (717) 489-4566



Marshall's R/C Raceway, RR 4, Box 640, Honesdale, PA 18431; Bill or Dot Marshall, (717) 729-7458

Modellbahn Ott Hobbies, 1145 E. Philadelphia Ave., Gilbertsville, PA 19525; (215) 367-5925

Mountain R/C Raceway, 918 S. Park Ave., Somerset, PA 15501; Bob Rhodes, (814) 445-4085

DC Ultra Oval, 13 York Rd., Warminster, PA 18974, (215) 672-5200

Dewinck R/C Hobbies & Raceway, 5601 Lincoln Way East, Fayetteville, PA 17222; Charles Gardenhour, (717) 352-8899

Dreamboat Hobbies, 2810 Pennsylvania Ave. W., Warren, PA 16365; Louie Dussia, (814) 723-8052

East St. Raceway & Art Center, 747 E. Railroad Ave., Verona, PA 15147; (412) 826-0602

East St. Raceway, 736 East Railroad Ave., Pittsburgh, PA 15147; Steve Maiolo, (412) 822-1324, (412) 826-0602

Hennig Scale Models R/C Raceway, 128 S. Line St., Lansdale, PA 19446; Bill Henning, (215) 362-2442

Track Directory

Mt. Laurel Speedway, 835-8 Hiester Lane, Reading, PA 19605; Joe Vaccaro, (215) 921-0176



New Garden Farms/Mushroom Bowl, 812 W. Cypress St., Kennett Square, PA 19348; Drew Pannell, (215) 444-1850



Pinion Twisters, Green Lane & Mitchell, Bristol, PA 19007; Bob, (215) 945-0325; John, (215) 632-9744



Pit Stop Hobbies, 262 W. Main St., Mount Joy, PA 17552; James F. Stovit Jr., (717) 653-6222



Pro Challenge Raceways, Wycombe Ave. (P.O. Box 536), Lansdowne, PA 19050; Bob Baldwin or Bob Paulauge, (215) 622-7651



Prop & Wheels Raceway, 139 W. Broad St., Tamaqua, PA 18252; Gil Walters, Prop & Wheels Hobbies, (717) 668-2288



R&D Hobbies & Raceway, 5101-C Jonestown Rd., Harrisburg, PA 17112-2924; Craig Bishop, (717) 545-4984; fax, (717) 545-5306



Race Place Hobbies, 201 Station Rd., Quakertown, PA 18951; (215) 538-2394



R/C Pro Speedway, Milville Rd., Bloomsburg, PA 17815; (717) 387-0266



RCO Raceway, 519 Broadway, Hanover, PA 17331; Chris Shaffer, (717) 633-9490



Riverside Raceway, PA Ave. W & Hickory, Warren, PA 16365; Jeff, (814) 723-4211



Rolling Wheels, West Hills Shopping Center, Coraopolis, PA 15108; Peggy, (412) 262-4858



South Mountain R/C Speedway, 357 Furnace Rd., Wernersville, PA 19565; George Merkel, (215) 267-4736



Staub Bros. R/C Speedway, 31 Locust St., Gettysburg, PA 17325; Todd or Scott Staub, (717) 334-5445



T&T Radio Controlled Racing, Randolph Rd., Great Bend, PA 18821; Jack, (607) 773-8603



T.C.'s R/C's, 1537 Freeport Rd., Natrona Heights, PA 15065; Tom Coriale, (412) 226-8802



Trains and Lanes, 3812 Newburg Rd., Easton, PA 18042; Jeff Setzer, (215) 253-8850



Wagon Hill Hobbies, 967 New Castle Rd., Rt. 422, Butler, PA 16001; Jeff Hyatt, (412) 865-9877



PUERTO RICO

Cachon Off-Road Track, Box 952, Barranquitas, PR 00794; (809) 857-0341



Cidra R/C Track, Carr 7787 Km 1.6, BoBeatriz Adentro, Cidra, PR; Humberto (Tito) Lizardi, (809) 739-1572



Cachon Off-Road Track, Box 952, Barranquitas, PR 00794; (809) 857-0341



ROHDE ISLAND

East Bay Hobbies, 629 Metacom Ave., Bristol, RI 02809; (401) 254-0778



R/C Hobbies, 47 Sandybottom Rd., Coventry, RI 02816; (401) 823-4335



Tri-State R/C Raceway, 205 Hallene Rd., Warwick, RI 02886; Raymond Dean, (401) 738-4908



SOUTH CAROLINA

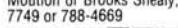
Bandit's Performance R/C Hobbies, 2037 S. Main St., Darlington, SC 29532; Bryan Howle Jr., (803) 393-3333



Berea R/C Speedway, 707 Sulphur Springs Rd., Greenville, SC 29611; (803) 246-4702



Capitol City Raceway, 1955 Legrand Rd., Columbia, SC 29223; Lee Mouton or Brooks Shealy, (803) 788-7749 or 788-4669



Coastal R/C Speedway, 8553 Hwy. 544, Myrtle Beach, SC 29577; Wendell Smith, (803) 236-9309



Inland R/C Speedway, 61 Newfound Lane, Myrtle Beach, SC 29577; James Watten, (803) 293-1753



Mid-Carolina R/C Superspeedway, 2222 Wintercrest Dr., Rock Hill, SC 29732; Fred Penland, (803) 328-8278



Monaco's Raceway, 727 E. Buena Vista Ave., N. Augusta, SC 29841; Bill Courson, (803) 279-8982



Palmetto Raceway, 5023A Rivers Ave., N. Charleston, SC 29418; (803) 566-0068



R/C Speed Shop & Raceway, 2122 Platt Springs Rd., W. Columbia, SC 29169; Eric Prevost, (803) 791-4715



Sidewinder's R/C Raceway Park, 1601-B West Enterprise St., North Charleston, SC 29406; Jimmy Closson, (803) 744-7441



Simpsonville International R/C Speedway, 3009 Belcher Rd., Simpsonville, SC 29681; Larry Chappelar, (803) 297-3572



TBS Superspeedway, 800 Hwy. 15N, Hartsville, SC 29550; Johnny Tiller, (803) 332-7117



SOUTH DAKOTA

CSF Speedway, Central States Fairgrounds, Creative Arts Bldg., 800 San Francisco St., Rapid City, SD 57702; Scoop Laskowski, (605) 342-5292



Dakota Off-Road Racers, 2989 W. Br. Co. 12, Aberdeen, SD 57401; (605) 226-0604



1/8-Scale Off-Road, 2989 W. Br. Co. 12, Aberdeen, SD 57401; Brian Bourdon, (605) 225-0803 (evening), 226-0604 (day)

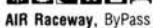


Flags of Fun R/C Raceway, 2802 Eglin St., Rapid City, SD 57702; Rex Conrad or Scoop Caskowski, (605) 341-2186



TENNESSEE

Action Hobby Shop, 3723 S. Mendenhall, Memphis, TN 38115; Brian Stricklin or Justin Austin, (901) 365-2620



AIR Raceway, ByPass Hobbies, 1114 Hwy. 11 N., Athens, TN 37303; Bill Burris, (615) 744-8999



Butturini's Best Raceway, 4828 George Williams, Knoxville, TN 37922; Steve Butturini, (615) 531-0325



Crash-n-Burn R/C Raceway, 7030 Maynardville Pike, Knoxville, TN 37918; Gary Daniel, (615) 922-8722



Competition Park, Rt. 10, Box 268, Crossville, TN 38551; Terry or Yvette Bowen, (615) 277-5048



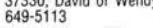
Cumberland Valley Raceway, P.O. Box 233, Ashland City, TN 37015; Jamie Pate, (615) 792-4371, ext. 1195



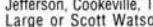
D&M's Downtown Raceway, 2703 US Hwy. 411S, Maryville, TN 37303; (615) 681-8919



Estill Springs Raceway, P.O. Box 187, Hwy. 41-A, Estill Springs, TN 37330; David or Wendy Panter, (615) 649-5113



Hobby World Raceway, 185 S. Jefferson, Cookeville, TN 38501; Scott Large or Scott Watson, (615) 528-2808



Lail Speedway, 812 Wells Rd., Maryville, TN 37801; Jack or Chris, (615) 983-9207



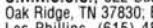
Mad Dog Motorsports, 707 Joy St. (Rt. 3, Box 247), Paris, TN 38242; Dan Mobley or Mike Andres, (901) 642-7794 or 644-1523



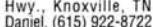
MSA R/C Racing, Rt. 12 Box 489 B, Crossville, TN 38555; D.R. Findley, (615) 456-0027



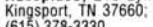
O.R.R.C.C.C., 322 Bus Terminal Rd., Oak Ridge, TN 37830; Bobby Green or Les Phillips, (615) 483-8805, 482-2406



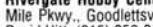
Panther Traxx, 7030 Maynardville Hwy., Knoxville, TN 37918; Gary Daniel, (615) 922-8722



Raceplace, 215 Lynn Garden Dr., Kingsport, TN 37660; Randy Horton, (615) 378-3330



Rivergate Hobby Center, 700A Two Mile Pkwy., Goodlettsville, TN 37072; David Hitt, (615) 859-3455



RMD Raceway, 175 Seavers Rd., Jackson TN 38301; Travis Robertson, (901) 424-0283



TNT Pro Hobbies, 5529 Pleasant View #2, Memphis, TN 38134; Tony Howell, (901) 377-0013



Tuckasee Off-Road Raceway, 1004 Lafayette Rd., Clarksville, TN 37042; Denny Hayward, (615) 645-2635



TEXAS

AA Raceway, 1617 Toomey Rd., Austin, TX 78704; (512) 474-8277



Anchored Acres Raceway, 1101 Sheppard Rd., Burkhardt, TX 76354; Bob & Patricia Veal, (817) 569-4707



Austin R/C Center, 9702 Gray Blvd., Austin, TX 78758; Caton Cobb, (512) 832-8144



B&C Speedway, 201 Enterprise Row, #101, Conroe, TX 77301; Bobby Hillin, (409) 760-1986



Budget Raceway, RR 1, Box 400 I-35, Bruceville, TX 76630; (814) 859-5296



Checkered Raceway, 7121 Perimeter Park, Suite 214, Houston, TX 77099; Rod Ward, (713) 849-3054



Dove R/C Speedway, 400 South I-35, Bruceville, TX 76633; Curtis A. Rowe, (817) 757-1150



Eastex Raceway, 45000 Hwy. 59 N., New Caney, TX 77357; Heinz Falke, (713) 399-1527



Hal's R/C Raceway, 1440 Bessemer, El Paso, TX 79936; (915) 591-2213



Heart o' Texas Hobbies & Raceway, 309 W. Hwy. 190, Copperas Cove, TX 76522; Larry Gholson, (817) 547-7505



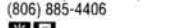
Indy R/C World, 220 Mesquite Village, Mesquite, TX 75150; (214) 686-7744



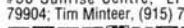
J&K Speedway, 201 Enterprise Row, Suite 101, Conroe, TX 77301; J&K Hobbies, (409) 760-1986



Outlaw Speedway, RT. 5, Box 173-3R, Lubbock, TX 79407; Derrell Butcher, (806) 885-4406



R/C Hobbies Raceway, 8500 Dyer, TX 79904; Tim Minteer, (915) 751-1864



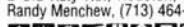
R/C Pro Shop, 12207 West County Road #129, Odessa, TX 79765



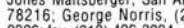
R/C Raceplace, 3546-A N. Main, Cleburne, TX 76031; Bruce Myers or Linda Achorn, (817) 558-2422



Randy's Hurricane Speedway, 9600-B Old Katy Rd., Houston, TX 77055; Randy Menchew, (713) 464-8020



Rebel Hobbies & Raceways, 11925 Jones Maltsberger, San Antonio, TX 78216; George Norris, (210) 496-2396; fax, (210) 496-3294



Rivercity Speedway, 11731 Wetmore, San Antonio, TX 78247; Ralph Hernandez, (210) 359-6870; Joe Toledo, (210) 341-5652



Ron's R/C Hobbies & Raceway, 2551 Lombardy, Dallas, TX 75220; Ron Salsini, (214) 357-3453



Riverside R/C Speedway, Boyz R/C Hobbies, 700 Elm St., Winooski, VT 05404; Charles Barsalow, (802) 893-2660 or 893-2332



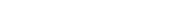
Southside R/C Raceway, 4409 FM2351, Friendswood, TX 77546; Roy Baxter, (713) 992-3541



Spring Creek R/C, 45 Fisherman's Rd., San Angelo, TX 76904; (915) 944-3850



Southside R/C Raceway, 4409 FM2351, Friendswood, TX 77546; Roy Baxter, (713) 992-3541



Southside R/C Raceway, 4409 FM2351, Friendswood, TX 77546; Roy Baxter, (713) 992-3541



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Southside R/C Raceway, 4409 FM2351, Friendswood, TX 77

Bob's Hobbies & Raceway, 910-J
Brandy Creek Dr., Mechanicsville, VA
23111; Bob Wagner, (804) 746-2758



Cooper's R/C Raceway, Rt. 4, Box
1228, Chatham, VA 24531; (804) 724-
4182



Craftech Challenge, Naval Base D-4,
Piey St., Norfolk, VA 23455; Bernie
Duffy, (804) 444-3846



Crossroads Hobbies R/C Raceway,
1104 W. Main St., Salem, VA 24153;
Ronnie Black, (703) 387-3414



Fairystone R/C Speedway, Rt. 4, Box
918, SR635, Stuart, VA 24171; Pat
Moon Jr., (703) 930-3984



Front Royal R/C Racing Association,
P.O. Box 1252, Front Royal, VA
22630; Pete Pomeroy, (703) 636-
6149



H&S R/C Raceway, 565 Electric Rd.,
Salem, VA 24153; Henry Dowd or
Stacy LaPrade, (703) 343-4012



Hobby Hangar Speedway, 4433A
Brookfield Corp. Dr., Chantilly, VA
22021; Kwang Ko, (703) 631-8820



Hobby Shack and Track, Route 2, Box
184, St. Stephens CH, VA 23148; John
or Laura Holder, (804) 769-1311



KC's Radio Control & Repair, Rt. 4,
Box 312, Trents Ferry Rd., Lynchburg,
VA 24503; Curtis or Kim Wright, (804)
384-8596



Lane's End Raceway, P.O. Box 153,
Bridgewater, VA 22812; Tony
Strother, (703) 828-6655 or 3471



Mid Atlantic Raceway, 89 E. Elizabeth
St., Harrisburg, VA 22801; (703) 433-
3952



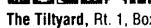
NSWC MWR R/C Track, C1243C
Dahlgren, VA 22448; Doris Copen,
(703) 663-1730



SHAMROC, P.O. Box 3739;
Winchester, VA 22604; Glenn Bland,
(703) 888-3927



Sterling Truck & Auto Racers, 20921
Davenport Dr., Sterling, VA 22170;
Ron Beckman, (703) 444-0333



The Tiltley, Rt. 1, Box 235A, Dayton,
VA 22801; Homer W. Allman Jr.,
(703) 828-3476 or 828-6655



Tracksider Hobbies, 1314 E.
Pembroke Ave., Hampton, VA 23663;
Rick Cardwell, (804) 723-4107



Trainland R/C Club, 5661 Shoulders
Hill Rd., Suffolk, VA 23435; Frank
Stevens, (804) 483-2331

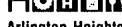


Winners Circle, 3236 W. Clay St.,
Richmond, VA 23230; (804) 355-7076



WASHINGTON

Allie's, 108 South K St., Aberdeen,
WA 98520; (206) 533-6638



Arlington Heights Speedway, 13629
228th St. NE, Arlington, WA 98223;
Shawn Bussert, (206) 435-3442



Firgrove TNT Raceway, 10611 136th
E., Puyallup, WA 98374; Walt Hale,
(206) 845-7675



Four Season R/C Racing, 2941
Sleater Kinney Rd. NE, Olympia, WA
98506; Gary & Sharon Brown, (206)
491-2430



Hank Perry Race Complex, Sullivan
Rd., WA 99213; (509) 927-1879



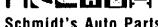
L&L R/C Raceway, 15818 SE, 287th,
Kent, WA 98042; Eric Lake or Bob
Lewis, (206) 639-1241 or 631-1664



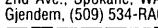
NORA Performance R/C, P.O. Box
955 (1673 Cedardale Rd.), Mt.
Vernon, WA 98273; (206) 755-9464



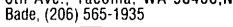
Raceway Hobbies, 188 Sunset Ave.
S., Edmonds, WA 98020; Dave or Ron
Steen, (206) 774-3285



Schmidt's Auto Parts, 10305 Old
Hwy. 99, Marysville, WA 98271; Jon
Filia, (206) 653-8838



Spokane Indoor Raceway, E. 6422
2nd Ave., Spokane, WA 99212; Mike
Gjendem, (509) 524-RACE



Tacoma R/C Raceway Hobbies, 6305
6th Ave., Tacoma, WA 98406; Nell
Bade, (206) 565-1935



Tearor Raceway, 8012 S. Tacoma
Way, Tacoma, WA 98499; Dave
Kleinman, (206) 584-8659



WEST VIRGINIA

Burr-Fab Raceway, 90 Davis St.,
West Union, WV 26456; Mark Travis,
(304) 873-2487



D.W. Reed's, 142 West Main,
Bridgeport, WV 26330; David Reed,
(304) 842-2742



Fairmont R/C Raceway, 430 Fairmont
Ave., Fairmont, WV 26554; Ed Kirby,
(304) 363-5509



Fulton's R/C Raceway, 2646 Chapline
St., Wheeling, WV 26003; James
Fulton, (304) 233-5355



R/C Race Place, Rt. 10, Box 351,
Morgantown, WV 26505; (304) 292-
0811



R/C Speed, Rt. 1, Box 363,
Ronceverte, WV 24970; Joe, (304)
647-4162



WISCONSIN

ABC R/C, 1441 B East Main St.,
Waukesha, WI 53186; Dick, (414)
542-1245



Antigo Hobby, 311 Superior St., Suite
7, Antigo, WI 54409; (715) 623-7655



Arena Park Raceway, Kenosha
County Parks, 7727 60th Ave.,
Kenosha, WI 53142; David Delabio,
(414) 657-6371



Fox Valley Off-Road Racing Club, R1,
Mayflower Rd., Hortonville, WI 54944;
(414) 739-9211



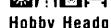
Frog's R/C Raceway, Rt. 1, Phillips,
WI 54555; (715) 339-2314 or 339-
2958



Gary's Hobby Center, 3701 Durand
Ave., Racine, WI 53403; Ron, (414)
554-8884 or 1-800-894-6229



Grant County Speedway, 2125 Oak,
Hazel Green, WI 53811; Brad Birkette,
(608) 854-2246



Hobby Headquarters, 224 North
Franklin St., Port Washington, WI
53074; Jesse or Jenny, (414) 284-
8850



Hobbytown Speedway, 4231 8th St.
S., Wisconsin Rapids, WI 54494;
(715) 421-1222



JJ's Dirt Heaven, 6028 County K,
Champion, WI 54229; (414) 866-9096



Maniac Motors Raceway, 244 Rt. 1
A1 Rt. H, Kendall, WI 54638; (608)
462-8935



MARCCA Raceways, 1810 S. Park St.,
Madison, WI 53713; Jeff Gundlach,
(608) 273-0519



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Musklynd R/C Raceway, Rt. 10, Box
269, Hayward, WI 54843; Jim Ahrens,
(715) 634-2109



Hobby Center, SQS.210 BI.H Apt.
204, Brasilia, DF-Brasil 70.273; 061-
242-0488



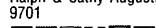
Pacific R/C Club, W7990 Hwy. P,
Pardeeville, WI 53954; Rhys Brenner,
(608) 742-7100



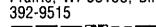
R/C Hobby Off-Road Track, Lewiston
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Diane Sawvill, (608) 637-8221



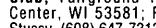
R/C Raceway, 2239 Cty. Rd. E.,
Baldwin, WI 54002; Lance Van
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R/C Raceways & Hobbies, 181 W.
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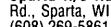
Radio Mania, 129 Harrison St., North
Prairie, WI 53153; Bill Bowes, (414)
392-9515



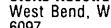
**Richland Center R/C Off-Road Racing
Club**, Fairground Rd., Richland
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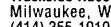
S.C.A.R.C.E. Raceways, 1303 W.
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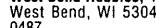
Sparta R/C Raceway, Golf Course
Rd., Sparta, WI 54656; Eric Johnson,
(608) 269-5861 or 269-6613



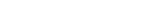
Stoltz Raceways, 548 Summit Dr.,
West Bend, WI 53095; (414) 338-
6097



Trackside Raceway, 4405 W. Bradley,
Milwaukee, WI 53223; Joel Gish,
(414) 355-1910



West Bend Hobbies, 144 N. Main St.,
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Track, 1790 Dell Range Blvd.,
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(307) 632-2156



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Wodonga R/C Car Club, 11 Murphy
St., Wodonga, VIC 3690; Ron
Langman, 011-6160-247-128



Aubry R/C Car Club, Aubry
Showgrounds, Aubry, NSW 2640; Ron
Langman, 010-240-2128



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Cartroubles Indoor Buggy Track, jan
Moonstraat 56-56, 2160 Wommelgem,
Belgium; Guy Ermes, 32-326-
51-15; fax, 32-3-326-51-01



Model Racing Club Oudenaarde,
Schedelkant, 9700 Oudenaarde,
Belgium; A. Chanterie, 32-55-31-36-
48; fax, 32-55-30-19-12



BRAZIL

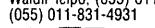
Brasilia R/C Motor Circuit,
Estacionamento do Estadio Mane
Garrincha, Brasilia, DF 70000, Brazil;
Alexandre (Alex), 55-061-273-7205



Hobby Center, SQS.210 BI.H Apt.
204, Brasilia, DF-Brasil 70.273; 061-
242-0488



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Waldir Ielpo, (055) 011-260-5628; fax
(055) 011-831-4931



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(608) 742-7100



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Fernandes Tourinho 999, 4th Floor,
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Correa, (55) 31-223-3676



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Action Wheelz, 462 Turcotte, Vanier,
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(418) 527-5756



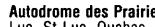
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Autodrome des Prairie, 935 Boul. St-
Luc, St-Luc, Quebec J0J 2A0; (514)
348-0718



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at Colastants, Ruthven, Ontario N8N
2W6; Lanny Fitzpatrick, (519) 735-
3039; Wayne Telasco, (519) 966-0702



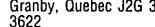
Circuit Pepsi, Centre de Location, 37
du Roi, Sorel, Quebec; (514) 746-8828



Circuit R/C Bonzai, 164 Cowie,
Granby, Quebec J2G 3V3; (514) 372-
3622



Circuit St-Denis Auto Téléguides,
292 DuLion, St-Denis sur Richelieu,
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(514) 787-1127



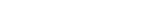
Circuit Teleguide Ville Mercier, 1101
St. Jean Baptiste, Mercier, Quebec
J6R 1C6; Norm Foster, (514) 699-
4003



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Deauville, Quebec; Daniel Vanier,
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Spruce Grove, Alberta T7X 2T4; Tim
Starrevied (403) 963-5795



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Gate, Unit 6, Nepean, Ontario K2E
7S4; Clark Freeman, (613) 225-9634



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Southport, Prince Edward Island, C1A
8X9; Gary Stephen, (902) 569-3262

East Wind Farm, R/C Corral,
Perimeter Hwy., Plessis Rd. South,
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Fast-Trax Speedway, RR#4, Trenton,
Ontario; Russ McPeak, (613) 394-
6411

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Trans Canada Hwy., Duncan, B.C. V9L
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M&M Hobbies Raceway, 430 McMurchy Ave. S., Unit 1604, Brampton, Ontario L6V2N4; Mike, (416) 452-8355



Mackay Track, 1025 W. 14th, North Vancouver, BC; Alan Walrond, (604) 684-8335



Maple Grove R/C Track, RR #3, Brockville, Ontario K6V 5T3; Ray Giroux, (613) 342-5549



Meaford Georgian Bay Raceway, Hwy. 26, West of Meaford, Meaford, Ontario N0H 1Y0; Greg Allan or Dave Shaw, (519) 538-1441



MORRAC Raceway, 6449 Crowchild Tr. SW, Box 36060, Calgary, Alberta T3E 7C8; Gary Fliegel, (403) 254-1386



Niagara R/C Speedway, 1874 Hwy. 20, Thorold, Ontario; Steve Ingram, (416) 892-5548



Quintrax Speedway, Box 1034, Belleville, Ontario K8N 5B6, (613) 962-1414; fax: (613) 962-7306



Radical Raceway, 150 Bradwick Drive, Unit 25, Concord, Ontario L4K 1K8; Roland Glass, (416) 660-5238



R/C Sports World, 4305-101 St., Edmonton, Alberta; Lyndon Kendrick, (403) 434-1985



Roussillon Hobby Track, 177-D St-Jean Baptiste, Chateauquay, Quebec J6K 3B4; (514) 698-2151



RROL, Nordon Restaurant, Hamilton Rd. at Commissioners Rd., London, Ontario; Mark Hennion, (519) 457-2758



Seaway Valley R/C Raceway, RR 1, Iroquois, Ontario K0E 1K0; Orrill or Carol Smyth, (613) 652-4953



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Union Creek Speedway, 281 Henderson Highway, Winnipeg, Manitoba R2L 1M4; MRCAR c/o Kelvin Community Centre, (204) 667-9186



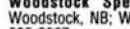
Universal R/C Speedway, Niagara St., Welland, Ontario; (416) 735-5051



West Coast R/C Raceway, 190-7771 Alderbridge Way, Vancouver, B.C. V5C 3A3; Michael Ma or Kelly Ho, (604) 276-8779



WORC, 861 Isack Dr., Windsor, Ontario N8S 3W6; Pete Adams, (519) 944-8519 or 974-3346



Woodstock Speedway, Queen St., Woodstock, NB; Woodstock Hobby, (506) 325-2067



COLOMBIA

Garrosa Raceway, Avenida Libertadores con Diagonal Gran Colombia, Cucuta, Colombia; Gabriel Rodriguez, 975-751892



DENMARK

Holstebro R/C Buggy Club, Mozartvej 7500 Holstebro, Denmark 2600; Michael Brusholt, 011-45-97-412-734



Rainbow Raceway, Eriksvej, 9 Glostrup, Copenhagen 2600; P. Christiansen, 011-45-52-848-504



Thor Minirace Odense, Sohusvej 255, Alleso, Odense, Behind Alessa Hallen (Sport Centre), Odense, Denmark; Ulrich Rasmussen, 011-45-65-303-707



FRANCE

Auto Electron, 35, rue B. de Ventadour, Limoges, France 87000; M. Boudoul, 55 052763



GERMANY

MC Köln, Bottgerstr., Worrigen, Germany 50769; Ralf Habel, 02733-477493



Mini Car Club Dortmund, Kortschstr. 4, 4600 Dortmund 13, Germany; Roland Schwan, 0231/213609



Oberhausen-Alstaden, Am Feserturm., Oberhausen, Germany 46099; Josef Holl, 0208-403676



Stoppelhooper Oberhausen, Niebuhstr., Oberhausen, Germany 46049; Matthias Reckward, 02801-1545



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Autodromo Accion, Quinta Santa Maria, San Pedro Sula, Honduras, Colonia Rivera Hernandez; Eduardo Hondal, (504) 52-2061



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H.K.R.C. Model Car Racing Club, Lot 2130-2137, Ko Po Tsuen, Sha Tau Kok Rd., N.T., Hong Kong; Alex Chan, (852) 659-2822



Kingsville Buggy Arena, Wong Chuk Yeung Village, Shatin, N.T., Pak Yeung, (852) 607-0828



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Beverly's Racing, Palm St., 188, Surabaya, Jatim, Indonesia; Jhon Mudik, 011-62-31-595-888



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Nahshoneat, Abba Niles Silver Str. 64, Haifa, Israel 32809; Golan Levy, (972) 039386444 or (972) 04231252



ITALY

Associazione Modelistili Cossato, via P. Maffei, Cossato 13014, Biella, Italy; Zanellato Romildo, 015-405881, fax 015-92709



JAPAN

Courtney Off-Road, Camp S.D. Butler, Okinawa, Japan, FPO AP 96379; USMC Arts & Crafts, 011-81-61173-53674



Foster R/C Raceway, Camp S.D. Butler, Okinawa, Japan, FPO AP 96379; Camp Foster Arts & Crafts, 011-81-61173-53674



Hansen Off-Road, Camp S.D. Butler, Okinawa, Japan, FPO AP 96379; USMC Arts & Crafts, 011-81-61173-53674



Iwakuni R/C Track, PSC 561, Box 978, FPO AP 96310-0978; David T. Eck, 011-81-6117-53-3662



COLOMBIA

Garrosa Raceway, Avenida Libertadores con Diagonal Gran Colombia, Cucuta, Colombia; Gabriel Rodriguez, 975-751892



DENMARK

Holstebro R/C Buggy Club, Mozartvej 7500 Holstebro, Denmark 2600; Michael Brusholt, 011-45-97-412-734



Misawa R/C Raceway, 13th Fighter Squadron, PSC 76, Box 2585, APO AP 96139-2585; 011-81-176-53-5181, ext. 226-6506



Yokata R/C Racers, Yokata Air Base, Tokyo Fussa-Shi, Japan 96326, June Uchiyama, 0425-54-6942



Zama Off-Road Raceway, 17th ASGCM Unit 45013, Box 3232, APO AP 96338 Japan; SFC Ken Campbell, 011-81-3117-63-8478



MEXICO

Alces Off Road, Lopez Mateos y Rayod S/N, Ensenada, Baja California, BC 22830; Jorge Bustamante, (667) 6-1476, 61477, 86729



Baja Jr., H. Valdez 151 Pte. Y Gmo. Prieto, Los Mochis Sinaloa 81200; Memo Asencio, Gaby Macias, 681-20276; fax, 681-26430



Hobby Centro, 12 De Diciembre No. 3070-A, Guadalajara, Jal. 45550; Alejandro Ortiz Del Toro, (36) 21-46-28



Hobby's Formula, Au observatorio 457 DF 01120; (905) 502-3620



Hobby Model's Raceway, Blvd. Garcia de Leon, 1555, Morelos, Michoacan 58260, (431) 5-01-22



Jaguar R/C Club, Calz. Zavaleta 116, Puebla 72150; Chema, Denise or Chiro, (22) 31-00-91, (22) 33-00-94



La Hielera, Prol. Corregidora Nte 350, Queretaro, QRO C.P. 76160; Jorge Morelos Rabell, (42) 12-15-25



Pista Casino, Hotel Casino de la Selva, Cuernavaca, Morelos 16507; Luis Duhart, (73) 73-00-91, (73) 33-00-94



R/C Racing Club, Obsidiana #2900, Zapopan, Jalisco 44560; Fernando Hernandez, (3) 616-73-47



Tony's Track, Obregon 364 Sur, Culicán Sinaloa; Guillermo Prieto, (67) 165708-168141



THE NETHERLANDS

H.F.C.C. Hollandia, De Werf 60, The Hague, The Netherlands; G. de Jong, 031-070-3679820



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Counties R/C Raceway, Pukekohe Showgrounds, Station Rd., Pukekohe, New Zealand; R. Northcott, 09 23 86904



Papakura Indoor R/C Car Club, 25 Tainere Cres., Papakura, Auckland; Colin Perry, (09) 298-4711



NORWAY

Dalen Raceway, P.B. 728, 6401 Molde, Norway; Johnny Reitan, 94 64 52 95



PHILIPPINES

Boyel R/C Hobby Shop, Unit No. 10 Lucas Commercial Center, Marcos Hiway, Mayamot, Antipolo, Rizal; Jose "Boy" Chua, 721-2555



Philippine R/C Association, B.F. Homes Paranaque, Metro Manila 1700; Ronald/Manny Villafior, 23-30-08



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TEAM LOSI TECH TALK

MORE AGGRESSIVE DOUBLE-X

Since the release of the Double-X, we have had many comments and questions concerning the setup of the car. Just about every single comment has been a good one. It seems that most of you are going much faster with your new Double-X racers.

One of the most common questions is: "How do I get the car to feel more aggressive?" Before you try the following suggestion, keep in mind that the Double-X is a much more stable car than any prior to it. Take a look at your lap times. Just because you don't feel like you're going fast doesn't mean that you aren't. It may just be that the car is more stable than another car that you were going about the same speed with.

If you still feel like you need a more aggressive handling car, try the following setup. On the front of the car, move the camber link in one hole toward the center from the stock location. Change the front spring to the 2-inch orange spring (A-5129). Install no. 55 pistons (A-5225). Mount the bottom of the shock in the outside hole of the arm and set the ride height to just above arms level.

Try the car with the rear suspension and camber set in the stock locations. If you want to "free up" the rear end a little, drop the rear camber link straight down one set of holes on the inside and the outside. This will increase the steering, but you will lose a little rear traction.

IMPROVING THE JUNIOR TWO/T

For those of you who have either a Junior Two or T, you made a wise decision. Not only do you have an entry-level racer that's competitive with full-blown racers, but it can be upgraded a little at a time to a Pro-SE or an LX-T.

The best place to start is with the chassis. If your chassis is getting old, and ready to be replaced, replace it with the Pro-SE/LX-T chassis (A-4051). Not only is this chassis lighter due to the recessed areas and thinner design, but it's also designed to accept the Double-X tranny with no modifications. Other than that, they are the same. You won't need to modify anything on your Junior series car/truck to install it, and you'll be able to easily upgrade piece by piece until you have a Pro-SE or LX-T.

Let us know what's going on! Address your questions and problems to Team Losi, "Tech Talk," 13848 Magnolia Ave., Dept. J, Chino, CA 91710.

(Continued on page 122)

Pipe Basics

Smoking Tips

by JOHN HUBER

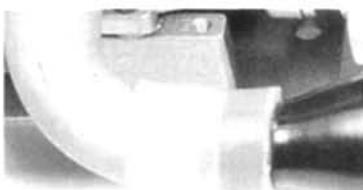
IF YOU THINK that the purpose of a pipe is just to keep engine noise down, you have another thing coming! A pipe—or, more correctly, a tuned pipe—has a dramatic effect on engine performance. By changing the length of the pipe, you can improve or retard the performance of the engine. A longer pipe is better for low-rpm applications, and a shorter pipe is better for high-rpm applications. But there are limits for both lengths. A pipe that's too long will allow the engine to run well, but you might not be reaching the max rpm. If it's too short, however, you can "fall off the pipe," lose rpm and, possibly, start chowing plugs. Here are some pointers that will help you to get the most from your engine and pipe.

TUNING

First, determine the length of your current setup. Using a piece of solder, follow the path of the exhaust from the glow plug to the highest diameter (usually the weld) of the pipe. For the most accurate measurement, try to keep the solder in the center of the header and the pipe.

Now that you know the length, you can start to adjust it for your needs. If you're running on a very big track and need a lot of speed, you can start to shorten it, but only $\frac{1}{8}$ to $\frac{1}{4}$ inch at a time.

Move the pipe toward the header to shorten the tuning length, but always leave a gap of at least $\frac{1}{4}$ inch between the pipe and the header. This will prevent them from vibrating against each other and causing radio noise.



To prevent radio interference, make sure you leave at least $\frac{1}{4}$ inch between the pipe and header.

Rubbing will also wear away metal, which might enter the engine and do serious damage. If the gap is too small, you can always remove a little of the header with a hacksaw or a Dremel tool.

To see how performance is affected, drive the car after each adjustment to the pipe. Always keep the other variables, e.g., gear ratios, fuel and tires, the same. You might have to adjust the needles to maintain the proper engine temperature.

MOUNTING

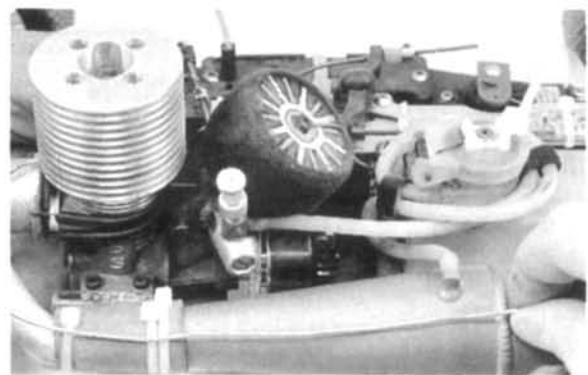
To join the header and the pipe, use a high-quality coupler, such as the ET-1 from Paris Racing*. Use one or two tie-wraps to secure the coupler in place. I don't recommend that you use automotive hose clamps because

you can easily over-tighten them and damage the pipe and the header.

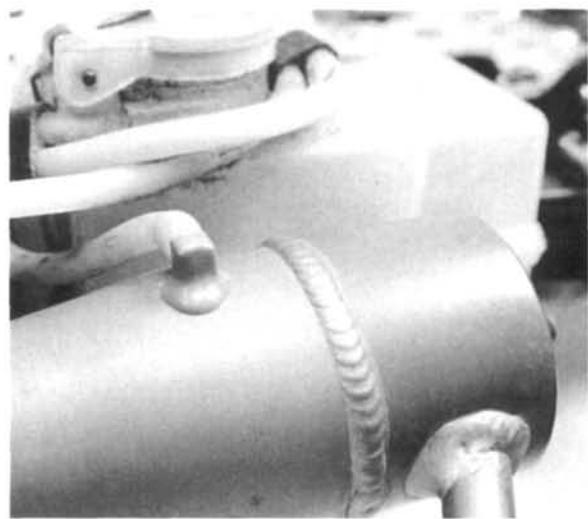
It's also important to keep the other end of the pipe firmly mounted so that it won't shift and alter your tuning. Some pipes have a setscrew mount on their ends so that you can mount them on the chassis. For the strongest mount, use the thickest music wire that will fit. Also, make sure that the pipe doesn't rub on the chassis; this will cause radio interference.

UNDER PRESSURE

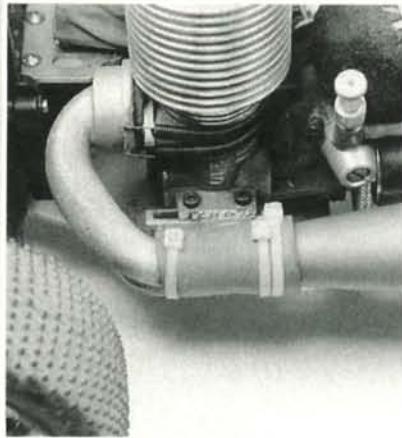
To help pump fuel to the carb, a pressure line must be installed between the pipe and the fuel tank. In many cases, you'll have to do this yourself. First, determine where you want the fitting to be on the pipe. It should be on the top of the pipe and as near to the largest part (or weld) as possible. If the weld



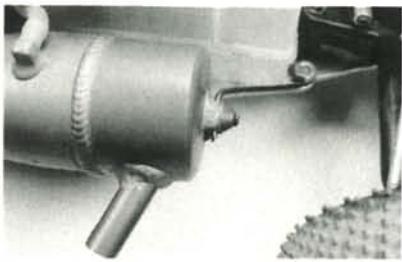
To measure the pipe length, use a piece of solder. Measure from the plug center to the weld in the pipe.



Mount the pressure tap at the highest point of the pipe. JB Weld will prevent the tap from leaking or falling off.



Connect the coupler between the pipe and header with tie-wraps. Use several if you need to.



Mount the front end of the pipe on the chassis with heavy-gauge wire. Make sure that the pipe doesn't rub on the chassis anywhere.

is in the way, you must put the fitting $\frac{1}{4}$ inch closer to the engine. Drill the appropriate-size hole and tap threads into the pipe. If you don't have a tap set, take the pipe to a local service station, and see if they can help.

Thread the pressure fitting into the engine. If it's a 90-degree type, make sure that the fitting faces the way you want it to. To ensure that it won't leak or fall off, many people use JB Weld to lock it in place. JB Weld is available at any good hardware store, and boy, is it strong!

With this info, you should be able to get more performance out of your engine, but remember: change the length only a little at a time. As you see the performance increase, remember that you can only go so far before you'll start to lose it. But luckily, you can always go back a little if you need to.

*Here's the address of the company mentioned in this article:
Paris Racing, 4254 Independence St., Chino, CA 91710; (909) 465-1189.

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OFNA HODR

(Continued from page 84)

lent, and the car stays level in the turns and in the air. Steering is better than I ever thought possible. The HODR knives through tight turns like a 1/10-scale, 2WD buggy and handles fast sweepers as if it were on rails.

I've never experienced such a combination of cornering, stability and jumping prowess. It does everything well, and it really excels at twitch-free cornering, regardless of terrain or speed.

The HODR begs you to go fast—so fast that I found the limits of the chassis and servo-saver arms in no time. I cased it on a jump and bent the flat chassis so badly that the rear diff's drive dogbone popped out. I solved this problem by running a fiberglass rod from the front shock tower to the rear tower, and by running a carbon-fiber L-bracket from the steering servo to just in front of the engine. This solved the flexing problem, but then I broke the servo-saver arm. I replaced the arm with a new one that I reinforced with a plate and screws. Mind you, our backyard track is more like an MTGP stadium than any R/C track I've ever seen, so I break things you'll probably never even tweak.

Still, the HODR is a nitro blast. It han-

dles as well as any 4WD buggy I've ever driven, and it offers a lot of performance for its relatively low price. If you're in the market for a competitive 1/8-scale racing buggy, check out the HODR; you may be surprised by how much comes in the box!

*Here are the addresses of the companies mentioned in this article:

OFNA Racing Division, 18 Technology, Ste. 159, Irvine, CA 92718; (714) 753-6056.

O.S./Great Planes Model Distributors, P.O. Box 9021, Champaign, IL 61826; (217) 398-6300.

Futaba Corp. of America, 4 Studebaker, Irvine, CA 92718; (714) 455-9888.

TRACK DIRECTORY

(Continued from page 102)

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Motoclub Castellon R.C., Rafalafena, S/N, 12004 Castellon, Spain; Octavio Traver, (34) 64 229705, (34) 64 237411



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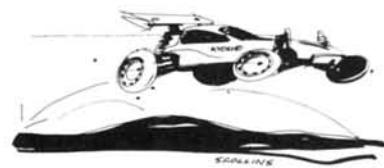
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R / C D O C T O R

by DOUG MERTES

Figure Out How to Fix It

Some guys seem to have bottom-less pockets when it comes to their R/C cars. If something breaks or cracks, hey, they just buy a new piece. I don't know about you, but I've never been able to do that. To begin with, I just don't have the extra money; I'd rather spend it on a new armature for my worn motor or on a new battery pack so I can get even more track time. Maybe you'd call me cheap, but I'm just being practical.

As a result of this practicality, I'm always searching for ways to make the parts on my cars last as long as possible. None of the tips in this column are all that brilliant; in fact, most of them are just common sense. I'd be willing to bet that you could pick up similar ideas by looking around the pits at local club races and by talking to your fellow racers.

Just remember that the goal is to make things last. That means checking your equipment after every run so that

you can recognize problems before they sideline you. If you can figure out a way to make something stronger or last longer, you'll be way ahead of the game and your competition!

I'm convinced that somewhere out on the track, an invisible foam-eating monster lies in wait for me and my car. I'll go for weeks at a time without chunking any foam tires, and then I'll lose a couple of big pieces in a row and always on a brand-new set of tires!

NEW, LONG-LASTING TIRES FROM TAMIYA



David Jun, of Tamiya's customer-service department in California, told me that Tamiya now has a new rubber formulation. Called "HBR" (high butyl rubber), it comes in both soft and medium compounds. Tires made of it are available with a 63mm outside diameter, and they fit the stock kit's 37mm-diameter rims.

Part numbers for these tires are: 53134—soft fronts; 53129—soft rears; 53128—medium fronts; and 53135—medium rears.

These new tires have a higher percentage of synthetic rubber, which is more durable and, therefore, prevents the tire from wearing quickly. The rubber also provides a better grip on coarse surfaces, such as rough concrete and asphalt. In case you need to ask, I've already ordered a set! Oh, and if you're wondering, these new tires will fit Kyosho rims, though their outside diameter is larger than that of the stock Kyosho rubber.



Do you need new tires? I really don't know, but it seems to me that if you could go just as fast with rear tires that look as if they've been used as fetch toys by a Doberman pup, hobby stores would sell a lot fewer tires!

So how do you fix the problem? Just replace the outside edge of the tire. Wait a minute, you say, nobody sells 1/4-inch-wide pieces of foam. You're right, nobody sells them; they throw them away. Hang around the track's tire-truing machine on race day for 10 minutes, and you'll be able to pick up enough foam rings to fix several sets of rear tires. Just make sure that the inner diameter of the rings is the right size for your rims, and that the rings are at least 1/4 inch wide. Anything narrower is just too hard to work with. Don't worry too much about the foam's density, either; the piece you're replacing is too narrow for its density to have much effect on your car's handling.

PHOTO BY DOUG MERTES



First, carefully cut away the damaged section of the tire. Use a tire truer, and make the cut using an X-Acto knife. You don't want to cut the rim, just the foam. Now, slowly move the blade out to the edge of the rim, and most of the damaged rubber will fly right off (use protective goggles if you don't wear glasses). With the machine still turning, use a sanding stick or a file to clean the rim down to the plastic, leaving a nice, clean edge.



Coat the rim, the edge of the mounted foam, the inside of the foam ring and one edge of the ring with contact cement, and let them sit for 15 minutes. Dip the ring and the edge of the rim into lacquer thinner, plop the ring onto the end of the rim (glued edge to glued edge), and put it on a flat area of your workbench with several pounds of load sitting on top of it (I use my battery box). In 20 minutes, you can remove the load and re-true the tire. Voilà! You'd never know the tire had been damaged. I've amazed a number of friends and fellow racers with this trick. ■

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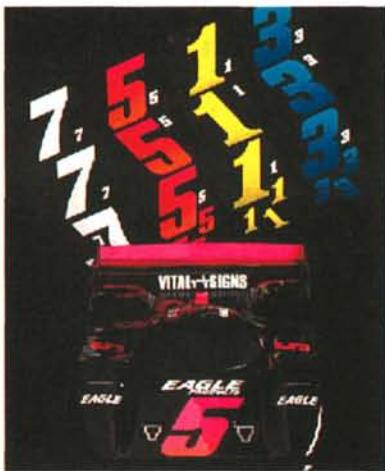
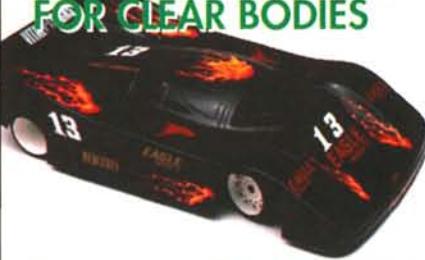
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LETTERS

(Continued from page 9)

when I do, I try to warn them about the potential side effects. You see, brake cleaner has a higher content of the chemical trichlorethide, which is the cleaning agent in the formula. In large doses, trichlorethide eats away at the epoxy that connects the armature wire to its pole, and that's no good! Conventional motor sprays that we've all come to know and love contain a lower level of trichlorethide that's safe to use on motors. Just don't do it man! Oh, by the way, never spray the stuff directly on your hands. It could lead to nerve damage. Chris Chianelli used to spray it on his hands, and you can see what happened to him. JH

SPEED FREAK

I'm a longtime reader of your magazine, and I think that it's the best and most helpful one published for R/C freaks like me! I recently purchased a Schumacher Nitro 10 2WD truck, and it's awesome! I read an article in your March '93 issue ("Nitro News") about 2-speed transmissions, and I'm wondering if I can use one on my truck?

ERIC FEDERLEIN
Ozone Park, NY

Good deal, Eric. Schumacher produces a 2-speed transmission (part no. U1533) for your truck. It retails for \$169.95 and comes with everything you need. Its coolest feature is that you can adjust it to shift at different points. JH

NITRO NEWCOMER

Help me! Right now, I have a Clod Buster with two Green Machines. I'm looking for a good beginner gas buggy to fit my budget. If it doesn't come with a radio or engine, point that out, too. I've looked at all the ads; they're great, but I have no clue. I love the letters; that's why I'm writing.

JOE HEINZELMANN

Joe, the first thing you need to think about is which scale buggy fits your needs. As you may already know, there are now several brands of 1/10-scale gas buggies from which to choose. Kyosho makes a few entry-level, 1/10-scale gas buggies, including the Rampage and Sandmaster, and the company has recently released its Inferno 10 4WD buggy. None of the Kyosho buggies comes with a radio system, but they can be purchased with engines. Traxxas now makes a 2WD off-road buggy version of its popular Nitro Hawk gas truck. It comes with the Image .12 engine, and it should be available in a ready-to-run version with a radio installed. Also, at OFNA's booth at the '93 Chicago RCHTA show, I spied a new, 1/10-scale "mini Pirate" that looks really hot. I don't have any details about this car, though.

I don't know of any ready-to-run 1/8-scale buggies, but if you're looking to get into 1/8-scale off-road inexpensively, check out Kyosho's Inferno DX, Mugen's Sport Seven, and the OFNA HODR and Tempo buggies. You'll have to buy a .21-size engine separately. Most engine makers offer budget models, so check with them to find out which engine is right for your needs.

FM

Magnum Pro-10 Radials

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When you need to put the power to the road, look to Magnum PRO-10 radials.

MAGNUM PRO-10 Radials are available in 3 compounds (Red, Gold, Silver) and 3 sizes, so you can alter stagger to suit a particular track (Left, Standard, Right). Also available are new, light, Magnum rear tires for high-banked, high-speed tracks. T.M. R/C Racing Components Magnum PRO-10 radials will also accept T.M.'s popular turbo-wheel caps for less wind resistance.

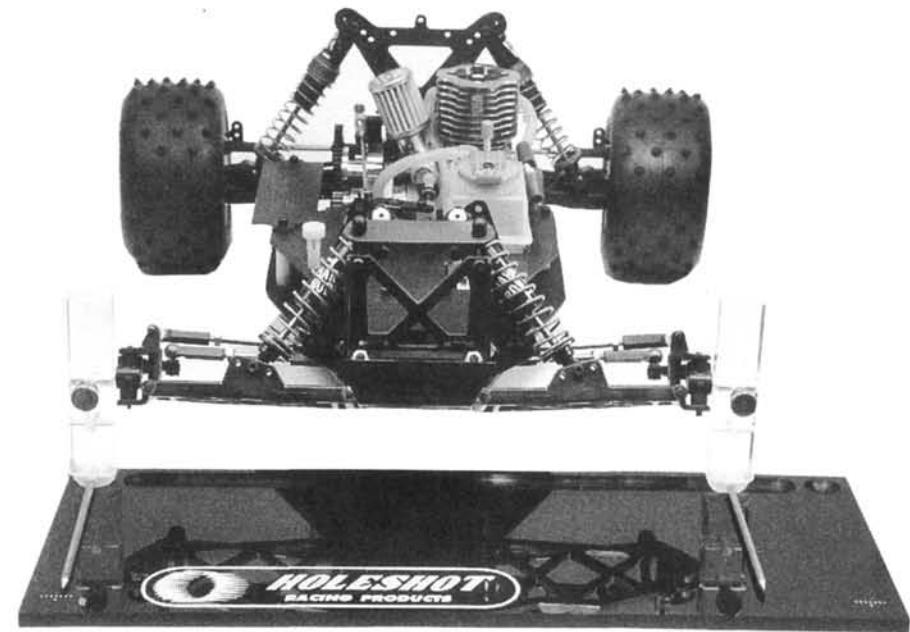


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HOLESHOT Alignment Board

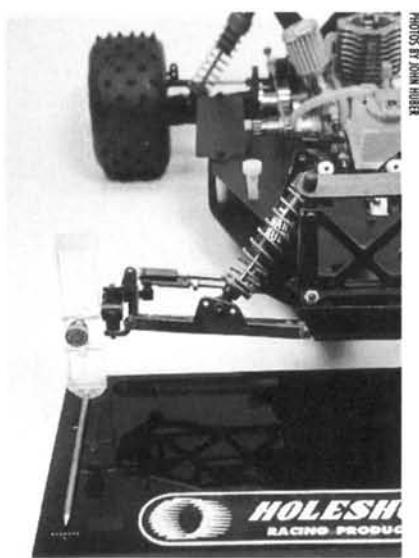
By JOHN HUBER

Straighten
Up and
Fly Right!



HOLESHOT
RACING PRODUCTS

Holeshot's new alignment board provides racers with an accurate means of setting static suspension adjustments, such as camber, toe-in/out and, in some cases, caster.



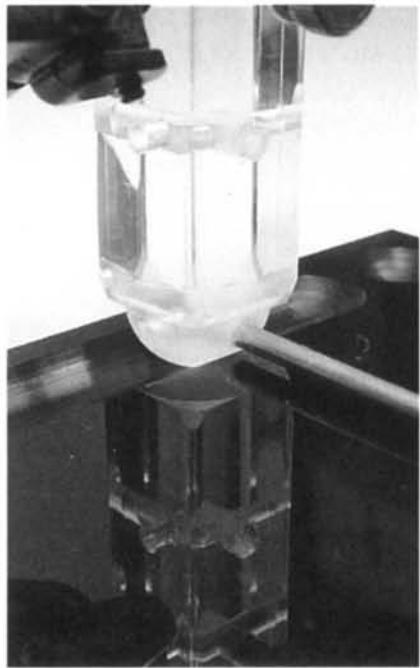
Acrylic blocks are attached to your vehicle's axles and secured with handy thumbscrews. The blocks are designed for use with a variety of axle sizes.

WHEN IT COMES to setting toe-in, camber and caster, most of us go by eye: "Yeah, that looks about right." Well, you'd be surprised by how much your eyes can deceive you! Holeshot Racing* has come up with a new alignment board to accurately measure these settings.

STEPPING ON TOES

The board is made of black acrylic plastic. Four clear acrylic blocks are also included; holes have been drilled in two of them to accommodate either $\frac{3}{8}$ - or $\frac{1}{8}$ -inch axles. The blocks slide onto the axles and are secured by thumbscrews. The bottoms of these acrylic blocks are ball-shaped; they fit into the ball-shaped slot and indentations that have been machined in the alignment board. The remaining two blocks are used as a chassis stand.

When you place the right axle block into the right ball-shaped indentation, the other axle block will fit into the slot to hold the front end straight with the alignment board. Using the slot allows you to adjust cars of almost any width.



The ends of the blocks are ball-shaped, and they fit into the slot and indentations that have been machined in the alignment board.

Two brass pins stick out of the alignment blocks. The one on the right block points to dots on the alignment board that show the degree of toe setting for that wheel. Raise the front end, and place the opposite block into the board's left-side ball-shaped indentation. This will show the degree of toe setting for the left wheel. For the best results, make sure that your radio is on and set to neutral so that the wheels won't move when you move the car.

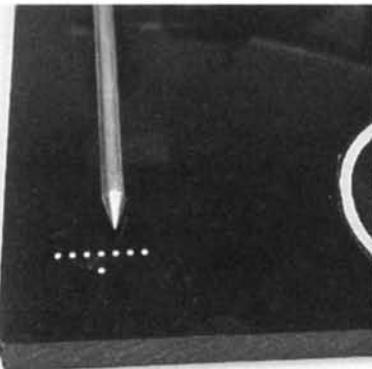
CHECKING CAMBER AND OTHER SETTINGS

Camber adjustments can be measured with an RPM camber gauge (included with the Holeshot alignment board). But how true are your rims? They might be warped, or the bead might stick up on one side. Measuring using one of the blocks instead of the rim gives you a much more accurate reading.

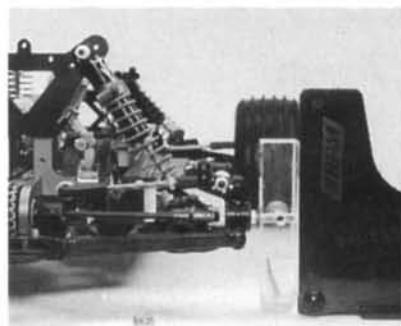
First I adjusted my LX-T to what I considered to be a neutral setting (zero degrees toe and zero degrees camber). I then set the car on the Holeshot board.

What I thought was zero degrees of toe was actually about 4 degrees! The right side was about 1 degree in, and the left side was 3 degrees in. I also found that my camber settings were off in the front and in the rear.

You can also measure bump-steer using the alignment board. Just compress the suspension and watch the needle. If the toe setting changes as the suspension moves, you have bump-steer. If it doesn't shift, it's perfect.



Pointers that protrude from the acrylic blocks show the amount of toe-in/out of each front wheel of your vehicle. Small dots on the board show the amount of toe (in degrees).

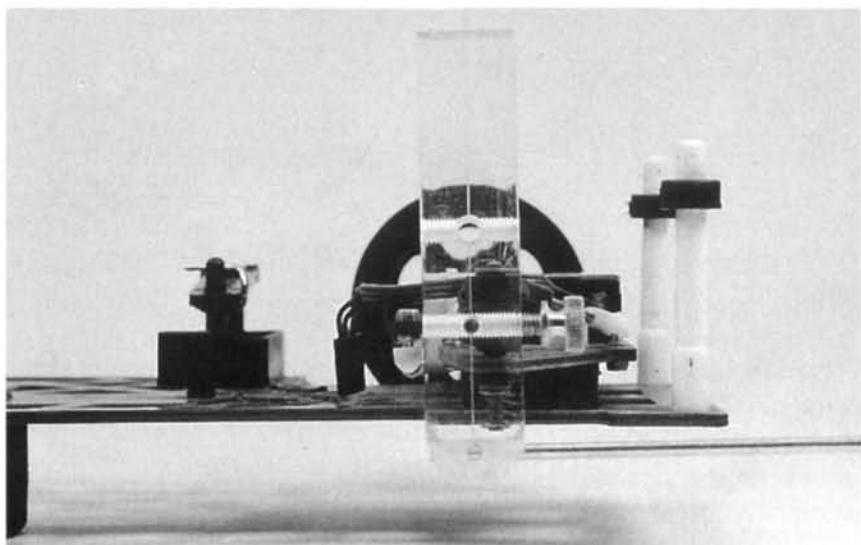


Holeshot includes an RPM camber gauge with each alignment board. Use the gauge with the blocks to set camber properly.

For on-road cars, you can also measure caster. A vertical line is scribed into each clear block. Line it up with the kingpin, and measure the caster with the RPM gauge. For this step, raise the chassis using the spare clear blocks or a spare tire.

I was amazed how much of an effect a little twist of the turnbuckles has. With the Holeshot alignment board, you can actually see and measure it. No serious racer should be without it!

*Here's the address of the company that's featured in this article:
Holeshot Racing Products, P.O. Box 630, Canton, MA 02021; (508) 587-0663.



A vertical line has been scribed into the side of each block. Using the lines, you can check and set the amount of caster on most on-road cars.

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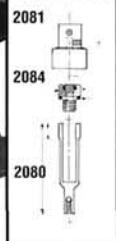
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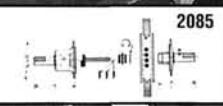
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| Calandra Racing Concepts | 120 | Moody Automotive | 84 | TD Enterprises | 150 |
| Chrome-Tech, U.S.A..... | 84 | Moore's Ideal Products | 64 | Team Losi | 90-91 |
| Class Recreational Products | 168 | Mugen USA, Ltd..... | 122-123 | Team Losi Tech Talk | 102 |
| Classic Wheel Promotions | 74 | Nationwide Hobbies | 169 | Tekin | 54-55 |
| Competition R/C | 12 | New England Model Hobby Show | 120 | Thor Manufacturing Inc. | 14 |
| Competition Electronics | 43 | Novak Electronics | 13,35 | T.M. R/C Racing Components | 132 |
| Dahm's | 31 | Parma/PSE | 44-45,89 | TNR Technical | 112 |
| Dillon Racing | 109 | Plus Co. International | 10 | Tower Hobbies | 152-161 |
| Dumas/Eagle R/C Graphics | 132 | Progressive Technologies, Inc. | 22 | Traxxas | 119 |
| DuraTrax | 33,60 | Pro-Line U.S.A. | 7,93 | Trinity Products | 3,11,16-17,19,29,51,73,86-87 |
| Elite Speed Products..... | 58 | Protoform | 112 | Twister Motors | 49 |
| ERI | 162 | Raborn Racing Originals | 170 | Victor Engineering | 88 |
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